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ALBERTA AGRICULTURE

Historical Review

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E. E. Ballantyne
DEPUTY MINISTER.

ALBERTA AGRICULTURE

A Short History

by

E. B. Swindlehurst

HON. H. E. STROM,
Minister of Agriculture

DR. E. E. BALLANTYNE,
Deputy Minister.

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Photos
Government of Alberta
Ernest Brown Collection

FOREWORD

Alberta is a relatively young province. In many ways it still is emerging from a pioneer era with the challenges of the future outnumbering and out-weighing the accomplishments of the past.

It is less than 100 years ago that the first ranchers from Montana and elsewhere began to drive their cattle onto our southern range and build their new homes there. Soon after that the railway came west and with it came people from many countries to clear and plow the virgin farm lands and form the cultural and ethnic mosaic of the province of Alberta.

We owe most of our heritage to the fortitude and labors of those early pioneers. As was the case in most of the rest of Canada, it was those who came and settled the farm land who paved the way for those who followed and developed our other resources. The farmers and the ranchers opened the country, started producing food, and gave the country a reason for existing. Surely this book must be dedicated to those who played such an important part in settling Alberta and making agriculture the viable and thriving primary industry that it is today. Their dedication, initiative, and ability to adapt to change have set us a fine example as we look to the uncertainties of the future and the opportunities that are available to us as our country heads into its second century.

The Hon. HARRY E. STROM

“Without the farmer there would be no government, or skyscrapers, or fine arts, or education, since he stands as the symbol of our dependence on the top few feet of the earth’s crust **

** H. S. Fry.
Agricultural Institute Review.
May, 1946.

About the author --

E. B. SWINDLEHURST

Edward B. Swindlehurst was born at Blackburn, Lancashire, on May 6, 1899. He came to Alberta in 1920 and for ten years farmed north of Edgerton.

Mr. Swindlehurst attended the Vermilion School of Agriculture and the University of Alberta, and during his student years was engaged during the summer months by the Alberta Department of Agriculture. Following his graduation from the College of Agriculture at the University of Alberta in 1934, he joined the permanent staff of the department, and for ten years preceding his retirement in 1964, he served as Research Information Editor and Supervisor of the Radio and Information Branch.

Mr. Swindlehurst has written a number of pieces since his retirement. Under ARDA, he prepared a water conservation study for the Municipal District of Sturgeon and a History of Alberta's Schools of Agriculture published by the Alberta Department of Agriculture. He also was co-author of the book "Furrows, Faith and Fellowship", a job he was commissioned to do by the Alberta Agriculture Centennial Committee. When it was decided to prepare this historical review of Alberta Agriculture, it was logical that Ed Swindlehurst should be called on again to perform this task.

WIDE OPEN SPACES

First immigration, then ranching, then cultivation of the land. That was the progress of agriculture in Alberta before the turn of the century.

Some indication of the early importance of immigration appears in the report of the Dominion Minister of Agriculture for 1874 and 1875, in which a single page suffices for his report on agriculture, while immigration in 1875 takes up fifteen pages plus an appendix of 189 pages of immigration agent activities.

In the 1870's with the buffalo driven from the plains, civilization was approaching in the form of the rancher. From south of the line the ranchers came, attracted to the unused grass of the prairie. Their cattle roamed at will over the boundless, unfenced countryside.

Later, cattlemen from Ontario and the British Isles joined them—men who knew good livestock and were well acquainted with their care and management. At calving and branding, and again in the fall when the long, last trail was under way, there was the colour and movement of the round-up that in story and legend brings the vicarious excitement of one phase of the so-called golden west.

Grass was abundant and taxes on pasture light, and the chinook winds allowed grazing throughout the year. The natural shelter of the coulees provided protection when the upper lands lay deep in snow. Some losses occurred, and increasing competition on the range demanded further that the stockman put up hay for use during severe weather. The period of this purely pastoral stage, between 1870 and 1900, gave way to the coming of the homesteader and the use of irrigation to supplement the often scanty rainfall of the southern plains.

But the future Alberta was a wild country in 1874. That was the year the North West Mounted Police founded Fort Macleod, and with their establishment of law and order opened the way for the ranching activities of the period.

The coming of the Canadian Pacific Railway in 1883 provided further incentive and with it the homesteaders too began to encroach on the vast rangelands. The C.P.R. spanned the continent from coast to coast in 1885. Only fifteen years before, in 1870, Rupert's Land had been turned over to Canada by Great Britain following relinquishment by the Hudson's Bay Company. In 1871, provision was made for homestead entries on quarter sections with a fee of ten dollars and residence requirements of five years. This was changed in 1882 to a three year residence requirement. In 1887 the Minister of Agriculture reported 90,000 head of cattle, 8,000 horses and 18,000 sheep in Alberta, a district stretching only as far north as the 55th parallel and named in 1882 in honour of the visit of Lord Lorne and Her Royal Highness Princess Louise Alberta.

In 1888, the Minister advised that not only were cattle in the foothills of the Rocky Mountains sufficient to supply the requirements of the country, but a surplus of 4,500 head had in that year been shipped to Europe. He went on to say that "such as had been properly selected and carefully handled netted good prices, but the sending of small lots of steers, underbred and in poor condition resulted in a loss to the shippers. It is, however, successfully demonstrated", he continued, "that by careful selection of well bred steers, and with proper attention during the passage, such animals can be landed in any seaport market of Great Britain without detriment, and will command prices which will leave a good margin of profit to the producer." In 1886, the Minister had mentioned that losses among cattle from ravages of wolves had been reported, but he estimated that the loss for the whole of the foothills country was not more than 2½ per cent during the year.

And so the ranching industry increased and thrived, and until 1900 the Alberta range was synonymous with cowboys and cattle. The south was the land of the cattleman; the north, the realm of the fur trader. More than a century earlier, the fur traders had established their posts along the Saskatchewan and the Athabasca. The Indians came to the posts with their furs, and the missionaries came to convert the Indians. And it is to some of those fur traders and missionaries that we owe the beginnings of tillage in Alberta, as opposed to the pastoral type of agriculture of the south.

Long before the buffalo had ceased to roam the plains, Fur Trader Peter Pond at his isolated post near Lake Athabasca was raising vegetables in his little garden. That was in 1779. He was the first to establish a post on the Athabasca River and the first white man, in the land that is now Alberta, to cultivate the soil.

Then came the missions at Lac la Biche, Lac Ste. Anne and St. Albert with the growing of grains and vegetables to feed their isolated communities. Pioneer missionaries like Father Lacombe, who first came to Alberta in 1852, and the Reverends George and John McDougall who established the Victoria Mission in 1863, made important contributions, not only to the religious and social life of the province, but to agriculture too.

Before the middle of the nineteenth century, some wheat was grown around the missions and forts of this western land. W. Everard Edmonds in his article "Fur Fort to Capital" in the Alberta Folklore Quarterly, September, 1945, writes of attempts at wheat growing at Fort Edmonton as early as 1825. Quoting from the notes of Fur Trader Alexander Ross who accompanied Governor Simpson of the Hudson's Bay Company to the Fort that year, he advises that "attached to this place are two large parks for raising grain, and the soil being good it produces large crops of barley and potatoes; but the spring and fall frosts prove injurious to wheat, which in consequence seldom comes to maturity."

With the late maturing varieties of that day, we can well appreciate the difficulty, although in his "Blankets and Beads" J. G. Macgregor mentions the artist Paul Kane reporting wheat growing on a flat near Edmonton in 1846 with a yield of twenty to twenty-five bushels to the acre. Wheat growing is also recorded at the Lac la Biche Mission in 1855. Frost was the enemy, however, and it wasn't until the introduction of Red Fife to the prairies in the 1870's that wheat became a factor in the west. Since that time, Alberta grown wheat has been often in the limelight.

In 1876, the French Mission at Fort Chipewyan won the World Championship for wheat and barley at the Centennial Exposition in Philadelphia. In 1893, the Reverend J. Gough Brick, an Anglican missionary in the Shaftsbury Settlement on the banks of the Peace River south of Berwyn, won the wheat championship at the World's Fair in Chicago.

Mention of the farming activities of Reverend John Gough Brick is made by the Right Reverend R. J. Pierce, Bishop of Athabasca, in an article in the Alberta Historical Review, Spring, 1956. Extracts from the writings of Mr. Brick quoted by Bishop Pierce indicate that in 1883 he sowed about one-and-three-quarter bushels of wheat at Dunvegan. Drought and frost spoiled the crop, but in 1884 and again in 1885 wheat was sown. After mentioning interest of the Indians in their gardens on each side of the Peace River, he speaks of going to Bear Lake with oxen to put in barley for an Indian there. Moving to Old Wife's Lake and Shaftsbury in 1886, it was from there that he produced the championship wheat exhibited at the World's Fair in Chicago in 1893.

Towards the end of the 1880's, settlers were coming into the Sturgeon Valley north of Edmonton, to the Red Deer area and to Stony Plain. But it was in the nineties that the real tide of immigration began. Following completion of the Calgary-Edmonton C.P.R. line in 1891, the territory between the two cities became a popular area for settlement.

The settlers were of many nationalities including Scandinavians, Germans, Austrians, British and Ukrainians, as well as citizens of the United States where good, free land was now becoming scarce. From eastern Canada too they came; of Scottish, Irish, English and French descent, they flocked to take advantage of the open lands of this last, best west. French Canadian settlers were coming in through the efforts of Bishop Grandin and the Reverend Father Morin, and populating the districts of St. Albert and Morinville as well as the settlements around Vegreville and Villeneuve. In 1903, the British of the Barr Colony arrived for settlement at Lloydminster.

By that time Alberta's wheat acreage was expanding. In 1898, 31,348 acres of spring wheat were reported sown in Alberta which yielded 25.27 bushels per acre for a total of 792,417 bushels. In that same year there were 38,946 acres of oats and 8,742 acres of barley grown. By 1905, when the provinces of Alberta and Saskatchewan were created, Alberta had a total crop area of 416,000 acres.

Between 1901 and 1905 around 40,000 homesteads had been granted in the province that was to become Alberta. But immigration and colonization policies were not concerned entirely with welfare of the people who would settle here. With creation of the provinces of Alberta and Saskatchewan in 1905, natural resources were withheld and an annual grant paid. The Dominion Government didn't want these provinces adopting settlement policies that would interfere with Ottawa's immigration plans. They wanted to be sure that purely provincial interests would not conflict with Dominion immigration efforts.

In 1903, The Honourable Clifford Sifton had remarked: "I want the House to understand the policy which this Government is following. It is endeavouring to build up a consuming and producing population in our vast western country for the purpose of giving legitimate occupation, without excessive duties, on a legitimate business basis, to the mechanics and artisans in Eastern Canada, and it is not necessary in order to give that occupation that we should have a fiscal policy which is oppressive to the people who are actually furnishing the money to pay for the goods which are produced in Eastern Canada."

Whether or not those proposed duties were excessive, or the fiscal policy of the Dominion was oppressive was a matter of opinion. It was long a bone of contention with Alberta farmers and their organizations. That the east was reaping advantage at the expense of the west formed a basis of complaint that resulted in not a few delegations to Ottawa over the years.

A PROVINCE IS BORN

In the first month of the birth of Alberta the elements smiled. Said the Alberta Department of Agriculture's annual report for 1905:

> SEPTEMBER – The weather remained unusually mild during the month, bright sunshine exceeded the average and a moderate rainfall was recorded except at a few stations where local heavy showers or thunderstorms caused the amount to be excessive. There was no snow but strong winds were extremely prevalent. Conditions were generally highly favourable for the crops and harvesting, a most bountiful harvest being nearly everywhere procured.

At the time of the 1905 report, with the Hon. W. T. Finlay as Minister, the Department of Agriculture staff of the new province consisted of Deputy Minister George Harcourt and two clerks. Mr. Harcourt was no stranger to the west. He had formerly been employed by the Dominion Government as Superintendent of Institutes and Fairs for the Territories.

During 1906, organization proceeded rapidly, and by the end of the year there had been appointed a Dairy Commissioner, a Chief Inspector of Noxious Weeds, a Chief Game Warden, a Recorder of Brands at Medicine Hat, a Chief Stock Inspector at Calgary, and a Superintendent of Farms and Institutes. In addition, branches were set up for Public Health, Statistics, Poultry, and Fruit Experiment. By the end of the year, people employed regularly by the Department had reached twenty-seven.

Among them was C. P. Marker, the new Dairy Commissioner. Mr. Marker was neither a newcomer to the west nor to the dairy business. Since 1897 he had supervised the Dominion Government-controlled creameries in the area that was to become Alberta, and on May 1, 1906, he commenced his duties with the province. That was the date that the government-controlled creameries were formally taken over from the Dominion by the newly-formed Provincial Government. Another appointment of note was that of H. A. Craig as Superintendent of Farms and Institutes. Mr. Craig succeeded Mr. Harcourt as Deputy Minister when the latter resigned in 1915 to take over the post of Special Assistant to Dean E. A. Howes of the newly-formed Faculty of Agriculture at the University of Alberta.

The Fruit Experiment Branch mentioned was set up in an attempt to assess the apple, crabapple and plum growing possibilities in the new Province. A circular was sent out by the Department to 108 people who were known to have experimented with fruit trees. Only a few had succeeded in ripening the fruit but useful information was obtained on varieties that had survived Alberta winters.

It was found that even at that early date apples had been grown at Medicine Hat, Lethbridge, Magrath, Cardston, Red Deer, and Clover Bar near Edmonton. Mr. J. Macfarlane of Cowley reported that he had obtained thirty-two large sized crabs from a tree of the Hyslop variety ten miles north of Cowley at an elevation of around 4,000 feet.

With this information obtained, experiments were set up with six co-operators in various parts of the province. They were Thomas Littleford, Medicine Hat; J. B. Merrill, Magrath; J. G. Vosburgh, Leavings (the Granum of today); A. S. Blackwood, De Winton; S. Troyer, Didsbury, and William Pflaging, Wetaskiwin. Added later were W. F. Wilkinson, Clover Bar; H. R. Payne, Vegreville, and A. S. Thresher, Kitscoty.

An acre of land was set aside at each location and the trees were planted 21 feet apart. The farmers on whose land the trees were planted agreed to carry on the experiments for five years and for a further period of five years if desired by the Department. In 1908, reports were varied, but they seemed encouraging enough to continue the tests. Interest, however, must have waned, since there is no record of the experiment being continued for a second five years and no mention is made in the 1911 or succeeding reports of the Alberta Department of Agriculture concerning this early work.

One of the first branches of the Department set up was that for control of noxious weeds. Already some of the newer sections of the country were being infested with weeds "by settlers purchasing foul grain and using it for seed and even bringing such dirty seed with them". It was suggested that immigration officials could serve a useful purpose by warning settlers of the dangers of this practice.

Russian thistle had made its appearance near Fort Macleod and farmers were warned to be on the watch for tumbling mustard. Wild oats too were found to be especially abundant in fields of some of the settlers who had come from southern Manitoba. "In view of the fact that perennial sow thistle is giving a great deal of trouble in Manitoba and has already been noticed at various points in the territories, it would be well to have this weed added to the list of noxious weeds in order that its spread may be checked", the Department advised.

Smut of wheat was early a problem and the accepted treatment was with bluestone (copper sulphate), or formalin. Some farmers were complaining in 1906 that the bluestone was ineffective and that they suspected adulteration. There had been cases in the past of iron instead of copper being used in preparation of the fungicide because of its cheapness, and the ineffective iron sulphate produced.

In view of the many complaints, samples of bluestone from all three prairie provinces were collected and forwarded for analysis to the Bacteriological Laboratory at Regina. No adulterated samples were found, and the Bacteriologist, Dr. G. A. Charlton, suggested that methods of treating the grain had been largely responsible for the poor results. "Perhaps alkali water has been used", he said, "in which case only a part of the copper sulphate was availble as a fungicide. Again, the solution many have been too weak or may have been indifferently applied; or the wheat may have been so smutty that a goodly number of spores survived the treatment".

And even in those far-off days every encouragement was offered to the farmer in the way of efficient farming methods, and the settlers were not slow to take advantage of this assistance. Summer fairs offered an opportunity not only to find out what was new, but to meet neighbours and engage in friendly chat. Back in 1906 at these summer fairs, instruction was offered in poultry and dairying and on the identification and control of weeds.

Nor were the women forgotten. Miss E. G. Charlton of the Alberta Department of Agriculture was busy providing cooking suggestions for the farm women attending. Her efforts were so well received that in August of that year a four-day school of instruction was held at Medicine Hat, "with the object of ascertaining whether the women of the towns and countryside would take advantage of the opportunity of learning something about the scientific principles underlying the work in the home". This school was received with enthusiasm and before it was over more than one hundred women and girls were present. Said the report:

> For years work has been carried on among the farmers of the Province in order to present to them the most approved and up to date methods in connection with their work. That much good has been done no one can deny. But are not the farmers' wives deserving of equal help and encouragement in their work in the farm home?
>
> The work of the women's institutes in other Provinces has been of the greatest benefit and would be in this Province also. There is no question that if farmers' wives understood more fully the principles of their work and could meet together to discuss new and improved methods of work the home life would be more enjoyable, and with this improvement would come greater contentment with life on the farm and less desire for life in other spheres.
>
> So long as children on the farm are brought up with the idea that to become a clerk in a country store is a step higher than to remain on the farm; that to belong to one of the learned professions is the thing in life most to be desired and that any work almost, which takes them away from the farm, is a step in advance, just so long will farmers be hewers of wood and drawers of water.
>
> True education will teach the farmer, his wife and family that there is no higher calling — no more independent one — than that of working with nature in the cultivation of the soil and in the handling of the plant and animal life upon the farm. It is hoped therefore that at an early date it will be possible to arrange for special meetings for the women.

It was during the summer of 1912 that women's institute work was first introduced into Alberta. There were six organizations that year with a membership of 250. In 1913, twenty-six more institutes were added to the list with a total membership of 1200.

These women's institutes arose out of the interest and enthusiasm displayed by the farmers' wives and daughters at the Farmers' Institute meetings. To promote the best methods of agricultural production in the province, the Alberta Department of Agriculture provided lecturers for the Farmers' Institute meetings, as well as providing annual short course schools in agriculture in various parts of the province. The women proved as enthusiastic as the men in the campaign for better farming, and were particularly interested in the poultry and dairy lectures, as well as in the course in domestic science designed to appeal to them particularly.

The home economics studies included household architecture, home sanitation and hygiene, nutrition, cooking, and care and training of children. The women's institutes of that time encouraged the beautifying of home surroundings, planting of trees and shrubs, and the making of parks and playgrounds for children. They instituted clean-up campaigns in the towns, and in fact had as their objective promotion of ideals in the home and the best standards of community life.

In January, 1906, the "Seed Special" visited Alberta. It was a train of two coaches fitted up as classrooms, and organized by the Seed Branch of the Dominion Government in co-operation with the railways of the west and the Provincial Departments of Agriculture. Stopping for an hour or so at each place of call, it visited twenty-five towns and cities during the seven days it stayed in Alberta. Starting at Cardston on January 15, it stopped at Lethbridge, Claresholm and Calgary and at other places en route; then made its way gradually up through Red Deer, Wetaskiwin, Edmonton, Fort Saskatchewan, Vermilion and towns between. The tour ended at Lloydminster on January 22.

Addresses were given on good seed, clean seed, and how to obtain it; and along the sides of the coaches were samples of various grains in sheaf as well as the threshed grain in bottles. Losses through smut and weeds were demonstrated, and mounted specimens of the worst weeds shown. Reports were enthusiastic and the record states that "at one point no less than nineteen fanning mills were sold after the visit of the Seed Special".

Instruction on the train was in charge of G. H. Clark, Dominion Seed Commissioner, Ottawa. He was assisted by Dr. James Fletcher, Botanist and Entomologist, Experimental Farm, Ottawa; W. C. McKillican, Dominion Seed Department, Calgary; Arch. Mitchell of Macleod (who later in the year became Chief Inspector of Weeds for the Alberta Department of Agriculture); R. N. Willing, Chief Weed Inspector, Regina; Angus McKay, Superintendent, Experimental Farm, Indian Head; S. A. Bedford, Superintendent, Experimental Farm, Brandon; John Miller, Secretary, Territorial Grain Growers Association, and W. H. Fairfield, Lethbridge.

Settlers were now coming in rapidly, and the increased amount of land brought under cultivation meant more grain for shipment. The amount of grain was increasing faster than the railways were able to handle it, in spite of the fact that the railways themselves were expanding rapidly. During 1906, as well as improvements to the permanent way of the C.P.R., there had been opened up an extension of the line east of Lacombe to Stettler. There had been an extension of the Canadian Northern Railway line from Edmonton to Morinville and Stony Plain, as well as improvement of the main line east.

In that year too, the Railway Commission visited Alberta, and representatives of the Alberta Farmers Association had appeared before them urging improvement of grain shipping facilities. Farmers representatives appeared too before the Royal Grain Commission during its visit to the province asking that terminal facilities be provided on the Pacific coast.

Railway construction was inevitably linked with settlement and agriculture in the west; and although there was a great deal of criticism of the remuneration in the form of money and land grants awarded the Canadian Pacific Railway Company, no one questions the value and importance of this first cross-Canada railway in the making of the west. In 1883 it arrived at Calgary and in 1885 it spanned the continent from coast to coast.

The C.P.R. Company was fully aware that its lands would be of little value as company assets in the early days of settlement. Its directors knew also that once the free homestead lands were gone, their own lands would be in demand. But apart from returns from land sales, it was to the company's interest to urge settlement from the beginning. Settlement meant passenger and freight traffic, so colonization activities of the railways took their place equally with government immigration efforts.

Then came the era of railway expansion. In 1885 the Alberta Railway and Irrigation Company built a line from Dunmore to Lethbridge. An extension of the railway from Lethbridge to Coutts followed in 1890, and shortly after there was an extension from Stirling to Cardston. The C.P.R. completed the line from Calgary to Edmonton in 1891, and in 1892 the Calgary to Macleod line was built.

Then came the other two east-west lines, the Canadian Northern and the Grand Trunk Pacific. The Canadian Northern reached Edmonton in 1905. The Grand Trunk Pacific, from Winnipeg through Edmonton to Wolf Creek, arrived in Edmonton in 1909 and at the latter point in 1910. From 1912 on were built the Edmonton, Dunvegan and British Columbia from Edmonton to points westward, and the Central Canada Railway to Peace River and Berwyn, both with their extensions. Another line of this period was the Alberta and Great Waterways from Edmonton to Fort McMurray. These Alberta local railways, later running into difficulties, were taken over by the province and after lengthy negotiation were sold to the Government of Canada and the Canadian Pacific Railway Company. The two cross-Canada railways, the Canadian Northern and the Grand Trunk Pacific, after default of payment of interest guarantees in 1917 were taken over and amalgamated by the Government of Canada.

Settlement followed the railways and scattered out over the adjoining lands; or settlers trekked overland to points seen or unseen, hoping that in the not too distant future the railways would follow. And, as the country opened up, the first few scattered settlers helped the newcomers to locate. They knew the country; they knew the homestead, the C.P.R., the Hudson's Bay and the school lands, and had a good idea of those most suitable for settlement. As the wiser landseekers arrived to look over the quarters before filing, they stayed overnight with those who had gone before, and were driven around the country in search of land. Thus arose certain stopping places where for a moderate sum the prospective settler might stay overnight in his search for suitable land.

Some of those who settled first had relatives or friends in the east, in the States or far overseas. They wrote and advised them of the possibilities and opportunities of life in the west. And though many came out not knowing where they were going, passing up good land for poor, or taking a chance and filing on quarters unknown, others found guidance from earlier arrivals. It was many years later that government appraisal was made of lands before settlement. Those early landseekers were on their own in their judgment of the land's potential.

And thus the west land, the lone land, became the land of hope. It was a hard life or an adventurous life, depending on one's fortune and outlook. Men from all walks of life made good on the land, and others from those same walks of life became discontented and failed. For those who succeeded the life was good; for the failures it was often tragedy. Many succeeded because they had nowhere else to go; others failed because they had the wherewithal to move out at the first disappointment.

PROGRESS

So far, encouragement of immigration had been left pretty much to the railways and the Dominion Government. They had agents in many countries, and it was considered unnecessary at this time for the province to duplicate the work. An exhibit was prepared, however, for the Dominion Exhibition in Halifax in September, 1906, that attracted considerable attention to the Province of Alberta and its opportunities. The exhibit featured a field of "Alberta Red" wheat with its caption "The Sun Always Shines in Alberta".

It was in the Cardston area that this Alberta Red wheat had its origin. The settlers in southern Alberta had early learned that winter wheat was a profitable crop. The Mormons who settled in the Cardston district in the 1880's introduced the soft winter wheat variety Odessa. It was raised with uniform success until introduction in 1902 of the superior quality Turkey Red from Kansas. Turkey Red was a hard winter wheat. So well adapted to southern Alberta conditions was this introduced variety that the grain proved superior to the Kansas product and under the name "Alberta Red" it was soon being shipped back to Kansas for seed. Its fame spread rapidly, and before long Alberta Red was being grown throughout the province's winter wheat area. Alberta Red became much in demand in the British and eastern markets and to some extent in the United States, and everywhere it commanded a premium.

It was popular with the farmer too. It wasn't simply that winter wheat seemed a safe and rewarding crop, but by growing it as well as spring wheat, the farmer could divide his work and avoid what sometimes seemed to be the mad spring rush. But winter wheat could not be grown throughout the province. Spring wheat was still king. In 1905, 75,353 acres of spring wheat yielding a total of 1,617,505 bushels, compared with 32,174 acres of winter wheat yielding 689,019 bushels. But the rapid increase in popularity of winter wheat is evident when we compare the above 32,174 acres with the 3,440 acres sown in 1903.

In 1908, an exhibit shown both at the Dominion Exhibition held in Calgary that year and at the Canadian National Exhibition at Toronto, brought home the changes that were taking place in

Alberta. "Another Trail Cut Off" was the theme. A cowboy following a familiar trail was suddenly stopped by a wire fence and a field of grain. A covey of prairie chicken added to the effect, and in the foreground, samples of coal, timber, baled alfalfa and other natural products of the province suggested something of its potential.

Then it was decided that perhaps Alberta had better start doing something for herself in the publicity line, so in 1910 offices were opened at Montreal, Toronto and Winnipeg.

This resulted in meeting and influencing a large number of incoming immigrants to settle in Alberta. The C.P.R. reported that in 1911 they alone received 175,000 immigrants from the United Kingdom, and that during the month of May 30,000 arrived (almost 1,000 a day). Fully 75 per cent of these newcomers came through to western Canada and 500 special trains were required to bring them to the West. It was also estimated that 100,000 settlers arrived in western Canada during the year from the United States. Land offices were crowded, and during the month of April nearly 1,000 homestead entries were made in the Edmonton land office alone.

Increasing demand from all parts of the world was coming in for information about the opportunities and resources of the Province. The tide of immigration continued and in 1912 reached a point higher than ever before in the province's history.

One of the earliest Alberta experiences of the effect of weather on stooks standing in the fields over winter occurred in the spring of 1912. The wet fall of 1911 delayed harvesting and threshing, and winter set in with many large areas standing in stook in the field. Very cold weather in November further set back operations and many of the threshing gangs quit and left for the east. Fine weather later started a few machines but there was ice and snow on the grain and most of it graded tough. There were many disappointed farmers that winter since they looked on their crops as ruined.

But a pleasant surprise was in store when, following threshing in the spring and early summer, very slight damage to the grain was noted. Said one report: "When . . . the grain which stood in the stook all winter and was looked upon by many as ruined, threshed out in the spring none the worse except for a slight discolouration on the outside of the sheaves (and in fact when sold graded one grade higher than grain from the same field in the fall) our credulity was severely tested. Yet such were the facts". This was not the last time that winter overtook stooks in the field, nor the last in which farmers would be pleasantly surprised with the threshing results in the spring. While in most winters the crop was threshed and in the bins before winter set in, there was the occasional time when winter got there first.

The homestead entries for 1913 showed the total number filed upon was 14,348, an area of 2,295,680 acres of crown land alienated. That was in Alberta. Each homestead entry averaged 3.10 persons, which meant that in 1913 about 44,480 individuals had been placed on the land alone. Dominion Government immigration figures for 1913 showed 21,387 coming to Alberta from ocean ports and 25,669 from the United States. That made a total of 47,056 as against 48,586 in the preceding year. It was considered, however, that the flow of people into Alberta in those years of rapid expansion was far greater than the Dominion figures indicated, since no consideration was given to entries from other provinces of Canada.

So first the cattleman ruled; then wheat was king. But experience proved him a rather fickle monarch. When the rain didn't come or it came at the wrong time, the throne toppled. The drought of 1910 and the unfavourable seasons of 1911 and 1912 led to serious appraisal and a change became evident in farm thinking. One result was the "phenomenal demand" in 1913 for milch cows. Around 1,000 were brought into the province that year. Not all were good, but all sold at high prices.

Hog production increased rapidly and the high prices of previous years made hog raising look like a profitable occupation. That fall, however, it looked as though the hog supply would exceed the demand, but removal of duty from the United States market paved the way for Alberta hogs to Chicago and Seattle, where good prices were received. Not only that, but large shipments were made to Eastern markets, particularly Toronto and Montreal. The quality there "attracted universal attention, demonstrating to the amazement of many the possibilities of Alberta stock and feeding stuffs. It certainly has caused the Ontario feeder to sit up and take notice to see Alberta hogs invading his special preserve." Thus read the report for the year of Deputy Minister George Harcourt.

Poultry raising too was on the increase. The need for imported dressed poultry fell off and the supply of eggs during the winter was so great that a surplus of stored eggs had to be shipped east.

A marked improvement was also noted in the interest being taken in poultry conditions. The demand for eggs and baby chicks from the poultry breeding station was more than double the capacity of the plant. This provincial government poultry breeding plant was established in 1908 on the Hudson's Bay Reserve on First Street in Edmonton, but late in the fall of 1912 it was moved to the University grounds, Strathcona.

When the project became known to the incubator manufacturers, many of them donated outfits to the Department. Among them were Cyphers Incubator Co., Buffalo, New York, one 220 egg incubator; the Chatham Manufacturing Co., Chatham, Ontario, one 120 egg incubator; the New Model Manufacturing Co., Toronto, Ontario, one 120 hot air incubator and one 120 egg hot water incubator; the Lee Manufacturing Co., Pembroke, Ontario, one 120 egg hot water incubator, one 120 automatic moisture supply incubator, and one outdoor brooder.

Among the poultry breeds, Barred Rocks were in greatest demand at that time, with 2,739 eggs on order from the poultry breeding plant on March 31, 1911. Demand for Buff Orpingtons and White Wyandottes was about equal with orders for 1,646 and 1,633 eggs. Rhode Island Reds were next (861 eggs), and White Leghorns followed (517 eggs). Experiments were conducted with a view of ascertaining temperatures in poultry houses of different construction, and the importance of ventilation was stressed.

Early in 1913, agitation was started for co-operative marketing of eggs, and the government undertook to market eggs for egg circles formed under regulations laid down. Members stamped the eggs, and delivered them to the manager of the circle, who then shipped them to the Department in Calgary where they were graded. In most circles the manager received or collected the eggs at stated intervals, but in some, the members delivered them to a creamery, cheese factory, store or house from which the manager took and shipped them.

Improvement in type of poultry was encouraged from the beginning of the province, and availability of purebred chicks and eggs from the provincial breeding plant proved a noteworthy step in this direction.

"It is pleasing to note as one travels around the Province", said the Deputy Minister of Agriculture, "the large number of substantial farm buildings that are being erected, the improvement in the general surroundings of the farm home, and the sure and steady advancement to a sane and sound policy of mixed farming that will lead at least to comfort and for many to comparative ease". That was in 1913.

Then came the war. The 1914 immigration compared with that of 1913 fell by 61 per cent, with a further decline of 74 per cent in the following year. Settlement from the United States was maintained, however, bringing in newcomers. They were chiefly of good type, and in many cases brought with them considerable capital and carlots of farm equipment.

But long before this, the United States was becoming a factor in Alberta settlement. George R. Parkin, in his book "The Great Dominion", (Macmillan, 1895), speaks of travelling around 1894 from Calgary to Edmonton "in a train packed with emigrants, men, women and children, most of whom were removing from a single district in the State of Washington to the banks of the Saskatchewan". He was told that northward bound trains from Calgary had for some time been crowded like this. Asked why so many people were moving up here, one of his fellow travellers replied that land was getting to be land on this continent.

These immigrants, Parkin noted, were of the class that the northwest most wanted. "Many are Canadians returning after trying their fortunes in the United States", he said. "Most seem to be bringing with them money, horses, cattle and household equipment. Best of all, they bring skill in pioneering work and acquaintance with conditions, in these points having an infinite superiority over the emigrant direct from Europe".

A few years earlier, another group of citizens from the United States had entered and settled in the district of Alberta. It was in 1887 that Charles Ora Card and his followers came to the Cardston area. Their experience with irrigation in their native Utah was to prove of immeasurable value in the new land of their adoption. But the Mormons were not the first to practise irrigation in Alberta.

WATER FOR THE PLAINS

Between 1870 and the end of the century, agriculture in Alberta was chiefly pastoral. Large herds of cattle roamed the plains, and around the year 1900, beautifully finished cattle were being driven to the stockyards at Calgary, High River, Claresholm, Pincher Creek, Lethbridge, Medicine Hat, and other prairie towns. Reporting on his annual trip to the west in 1902, Dr. Wm. Saunders, Director of the Dominion Experimental Farms Service, remarked: "Several days were spent among the ranches of the plains. The season has been a favourable one for stock. At Gull Lake, several large flocks of sheep were seen, at Crane Lake some large bands of pure bred Clydesdale horses and at Stair a herd of purebred Galloway cattle numbering about 700. From Medicine Hat, Lethbridge and other points, many train loads of fine beef cattle were being forwarded to Great Britain".

The short grass of the prairie provided rich, nutritious feed for livestock, and so long as plenty of land per head was available ranching proved a good life. But for farming, rainfall was both limited and erratic. The occasional year produced bountiful crops, but many were the years when under cloudless skies, the bright sun burned the crops and left the homesteader looking hopefully for next year.

The possibilities of irrigation were early recognized and restricted irrigation was practised by the ranchers in the early history of the province. John Glenn is credited with the earliest use of water for irrigation in Alberta. In 1879, he directed water out of Fish Creek, eight miles south of the present City of Calgary and irrigated fifteen acres. We next hear of a squatter, M. S. Brown, irrigating portions of sections 5 and 6 in Township 5, Range 26, West of the Fourth Meridian in 1882 with water from the Belly River.

But the Mormons, well acquainted with the possibilities of irrigation did not long delay their activities in this phase of agriculture. As early as 1889 they were building ditches with Lees Creek as the source of water, and in 1891 Charles Ora Card and John W. Taylor acquired under contract some 700,000 acres of land east and north of Cardston with a view to irrigation development and settlement. Application was made to Parliament and in 1893 assent was given and the Alberta Irrigation Company formed, with Sir Alexander Galt as President.

Several small projects, largely by individual effort, were developed during this period, but it was not until 1897 that the first large irrigation project got under way, with the St. Mary River as its source of water. In that year, the Alberta Irrigation Company engaged Irrigation Engineer George G. Anderson, of Denver, Colorado, to prepare an irrigation feasibility and cost report on the Company's land. In 1898 work on the canal was started. E. T. Galt was then president and C. A. Magrath was manager.

The Canadian Pacific Railway Company, always interested in settlement possibilities, offered financial assistance. In 1899 the name of the Alberta Irrigation Company was changed to the Canadian Northwest Irrigation Company. Later, it became the Alberta Railway and Irrigation Company.

Writing of the Lethbridge area in 1903, Dr. Wm. Saunders reported:

> The Mormon settlements in this district are growing fast. A drive was taken to the town of Stirling also to Raymond. Stirling which is only three years old has now a population of 700 and the settlers have cropped 3,500 acres of land this year, about half of which was wheat. A considerable quantity of winter wheat is grown here. Raymond is fifteen miles from Stirling. In my last report I made some reference to this new town, which was then being founded. In September 1902, when I first passed the site of this place, two or three tents were the only objects visible on the wide stretching prairie; but in August, 1903, after a lapse of eleven months, a fine town had been built with a population of 600, and between 4,000 and 5,000 acres of land were under crop. The estimate for the wheat crop at that time in that district was from 25 to 30 bushels per acre.

In 1903, the Canadian Pacific Irrigation Company was inaugurated with the aim of watering lands along the Canadian Pacific Railway main line east of Calgary with water from the Bow River. And about 1907, the Southern Alberta Land Company with headquarters at Medicine Hat was established for watering land west of Medicine Hat. In 1912, the Canadian Pacific Railway Company took over the interests of the Alberta Railway and Irrigation Company, under which name the Galt interests had been consolidated, and proceeded to colonize the lands. This tract included almost 500,000 acres of which about 120,000 acres were considered irrigable.

It wasn't until 1919 that the lands of the Southern Alberta Land Company (by that time the Canada Land and Irrigation Company) were made available for purchase. The area of this tract was around 530,000 acres of which 203,000 acres were considered irrigable. The Taber Irrigation Association, established in 1919, was watering in 1920 some 17,000 acres near Taber on the storage waters of the Lethbridge Irrigation Scheme. And by that time a number of other schemes were underway to which the Dominion and Provincial Governments were giving encouragement.

But before irrigation in the Northwest Territories became a fact, land surveyors were coming out from the Department of the Interior to survey and subdivide the land for settlement and mining. Among them were men like William Pearce, John S. Dennis and Charles A. Magrath.

William Pearce was one of the ten land surveyors sent from the Department of the Interior in Ottawa in 1874 to survey the boundary between Canada and the United States. In 1887, as Inspector of Mines, he moved his office from Winnipeg to Calgary. With his keen interest in the west, he suggested to the Department in 1885 the advisability of irrigation on the Canadian prairies. In 1891, he prepared, for the Department of the Interior, a treatise on irrigation practices based on laws in British Columbia, Montana, Washington, New Mexico and Colorado. In 1893, in co-operation with the Department of Justice, he drafted the Northwest Irrigation Act, which received Parliamentary assent on July 23, 1894.

John S. Dennis was another early advocate of irrigation. As Inspector of Surveys he became closely associated with William Pearce and gave Mr. Pearce full credit for his advocacy of irrigation, and his bringing to the attention of both the Department and the public the benefits that might accrue.

Charles A. Magrath came west in 1878, and his name appears on many of the original maps of southern Alberta. In 1885 he was engaged by Elliott T. Galt, son of Sir Alexander Galt to look after developments started by his father. Mr. Magrath became first mayor of Lethbridge in 1891, and in the same year represented the district in the second legislature of the Northwest Territories. He was re-elected for his third term in 1897 during which he was appointed Commissioner without portfolio in the Haultain government.

Another, but later name associated with irrigation in Alberta is that of P. M. Sauder. He was born on a farm near Preston, Ontario, and after obtaining his diploma in Mechanical and Electrical Engineering from the University of Toronto in April, 1904, he came to Regina. From June 1, 1904 to July, 1905, he was employed as a draftsman in the Irrigation Branch, and was then engaged in field work in Alberta and Saskatchewan. In 1909, he became Chief Hydrometric Engineer for the Irrigation Branch with headquarters in Calgary. Until 1920, he spent most of his time in hydrometric surveys. In 1940, Mr. Sauder was appointed Director of Water Resources by the Government of Alberta, and in 1946 he became Manager of the St. Mary and Milk River Development. In the course of his early explorations in southern Alberta, he met many interesting people and enjoyed a variety of experience. Some of his experiences he relates in his detailed "History of Irrigation in Alberta", which he is preparing for the Alberta Department of Agriculture.

It was men of this calibre who paved the way for construction of such enterprises as the Bow River Irrigation Project and the later St. Mary and Milk Rivers Development, and the great benefits that accrued from harnessing the waters and guiding them over the thirsty lands of the southern prairies.

The advantages of irrigation were many. Under irrigation, land that was practically worthless produced satisfactory crops. And not only grain could be grown; but crops like alfalfa, hay, sugar beets and vegetables gained prominence. Irrigation made possible the growth of trees, small fruits, flowers and vegetables, and added to the improvement of the home surroundings. Artificial lakes with a park provided recreation. Under irrigation the sugar beet industry flourished, and the by products (tops, pulp and molasses) were used for fattening livestock. Irrigation districts close to rangelands improved the value of the range. Cattle could be moved from the range to the irrigated areas for winter feeding or finishing, and since under irrigation a plentiful supply of feed is assured, a dry year or a severe winter on the range became less of a problem.

But irrigation was not from the beginning an uninterrupted success. Two or three rainy seasons in succession led to the homesteaders' belief that it was a waste of time and money. Only when the dry seasons returned did the settlers again turn to irrigation for relief.

Three stages have marked the history of irrigation development in southern Alberta. The first was the era of private projects in which individuals irrigated small areas for their own use. The second was the time of the railway and land companies; the day of the Galt interests and the C.P.R. irrigation expansion and colonization. The third was the stage of Alberta Government assistance in the organization of co-operative irrigation districts. Today the benefits of that early energy and foresight are evident across much of the semi-arid region of the Palliser report.

But in the beginning, little irrigated land was available, and the great colonization urge of governments and railways was not always of benefit to the province or its people. Settlement in the drought areas of south-eastern Alberta meant hardship for farm families or abandonment of their lands; or removal later of those remaining to lands more suitable for farming. Large tracts of land were opened to settlement that were unsuitable for farming. The semi-arid area of the southeast known as the Palliser triangle was the most serious of these.

The area was named after Captain John Palliser who during the years 1857 to 1860 was commissioned by the British government to explore "that portion of British North America which lies between the northern branch of the River Saskatchewan and the frontier of the United States, and between the Red River and the Rocky Mountains, and to record the physical features, nature of its soil, its capability for agriculture, the quantity and quality of its timber and any indication of coal and other minerals". He divided the country between the Laurentian Shield and the Rocky Mountains into two parts, the "fertile belt" and the "semi-arid desert". The fertile belt was the wooded and the park areas. The semi-arid desert was the treeless prairie.

Following the survey, Palliser sketched his famous triangle which had its base on the United States boundary. On this base it extended from Turtle Mountain in Manitoba to a point near Waterton in Alberta. It then proceeded north-west to the Old Bow Fort on the Banff highway. From there the line ran north-east to Olds and then almost due east along the 52nd parallel to a point south of Saskatoon. It then turned south-east to its junction with the base line on the 49th parallel at Turtle Mountain.

In his journal, Palliser wrote of the dry sloughs and creeks of the area; of the scarcity of water and sometimes of pasture for his horses. He believed that the fertile belt was well suited to agriculture, but that the area within the triangle was unsuited to agricultural settlement. The bumper crops and high prices of 1915 and 1916 seemed to disprove Palliser's theory; but the drought years of 1917-22 and again from 1926 to 1928 and later, proved the soundness of his views.

CATTLE, SHEEP and HORSES

There was little settlement in the Palliser Triangle before 1906, but between then and 1911 the settlers came in quickly. But in 1906, cattle from the ranges were pouring in. The shipments in that year were such that the railroads were unable to provide cars for all of them and many were turned back to the range. The change from an open range to a fenced farm economy was becoming evident, and many of the large ranchers were making little effort to replenish their range.

"The increasing settlement of the land once devoted to range purposes, consequent upon its suitability for growing winter wheat has been a factor in the restocking of the range", noted the Alberta Department of Agriculture Annual Report for 1906. The report continued: "Another feature is the disinclination of the Federal Government to grant any extended leases in the old ranching country. As a result those ranchers who have only limited areas have been selling off their herds and disposing of their lands. Large herds have been moved north and east of the Red Deer River, while large numbers of heifers have been spayed and will go to the market when ready. This all means a diminution in the number of cattle for shipment in the immediate future."

The report pointed out, however, that settlement of the land meant that the number of cattle would gradually increase again and reach larger proportions than ever before. "It is generally counted", the report advised, "that it requires twenty acres of open range land for each animal, or eight head per quarter section. It is an easy matter for a settler on a quarter section to keep as many head as the land would have supported under range conditions, and still grow a lot of grain. In the central portion of the province winter feeding is being taken up and gradually this line of work will be adopted as better facilities for feeding are available. This will tend to spread marketing of cattle over the whole year rather than to rush them all forward in the fall when prices are sure to be lowest".

It was regretted that the sheep industry had not advanced as rapidly as hoped. Some of the reasons mentioned were lack of shelter during the lambing season with consequent loss, together with the depredations of coyotes and wolves. The inrush of settlers too, as with cattle, was expected to have a deterring effect.

Gone, in this province, were the days when sheep were discouraged. Although sheep were present in Alberta in the early 1880's, differences between sheep and cattle ranchers were apparent from the beginning. An Order in Council of 1882 prohibited sheep grazing on Dominion lands, and by 1889 restrictions were such that the large sheep ranches were disappearing. Revival of the industry in the last years of the century resulted in conflict again between cattle and sheep men, and in 1901 separate territory was allotted by the Dominion Government and the sheep men were driven east of Medicine Hat. But the sheep were soon moving back into southeastern Alberta and by 1906 they numbered over 154,000.

On May 20, 1908, a Provincial Livestock Commissioner was couraged by the influx of settlers was horses, and in the enrolment of stallions and encouragement of horse breeding associations every effort was being made towards production of the type of horse best suited to the farm. In 1906, 491 stallions were enrolled, of which 162 were purbred and 329 grades. Of the purebreds, the Clydesdale was the most popular with 81 enrolled, followed by the Percheron with 34. Ten each were enrolled of Shire, Standard Bred and Thoroughbred. The remainder were made up of Hackney (2) Suffolk Punch (3), French Coach (2), Belgian (2), French Draft (5), Cleveland Bay (1), and French Canadian (1).

On May 20, 1908, a Provincial Live Stock Commissioner was appointed in the person of W. F. Stevens. His duties were "to assist the farmers and small stockmen in marketing their live stock; to ascertain as far as possible the difficulties in the way of small stockmen and assist in removing them, and to strive to improve livestock conditions in Alberta".

Livestock poisoning by loco weed was creating a problem in the foothills and the general recommendation was to remove the weed by digging. More and more animals were being fed in the winter for spring delivery and there was a brisk demand for dairy stock.

The Game Guardian too was having his troubles in 1908; this time with the Indians. He reported that the greatest problem in connection with protection of game was to find means to restrict the

Stoney Indians of Morley. Their reserve, he said, was fit for nothing but the raising of horses and cattle, and instead of endeavouring to earn a living by other means, these Indians were hunting at all seasons of the year. One settler complained:

> The Stoney Indians are both fishing and hunting out of season. They are cutting holes in the ice and catching trout by the bushel. Two years ago I saw them kill four deer out of season and this year the mountains were full of Indians long before the season was open.
>
> I was with the D. L. Survey party a few days and on our way we could hear the Indians shooting and hear their dogs barking running deer. There are about fifty in one bunch and they are cleaning the country out. In their camps you could find any amount of sheep hair and deer long before the season was open. The ranchers are missing a good many cattle and they all think the Indians are killing them and I think there is no doubt about it. The other day I accidentally ran onto an Indian and as soon as I came in sight he raised a red flag and began to signal with it. It was a signal to other Indians.
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> They killed a steer for Mr. . . .. He sent for the police and on their arrival they thought it no use to make any arrests for there were so many Indians. There is not enough game left for the Indians to live on and they must surely live on something. Why can't they be kept on their reserve like other Indians? Why is it they are allowed to hunt big game with dogs? I am safe in saying this outfit has not less than 30 dogs. It is a shame the way they are allowed to do.

The Game Guardian argued that the Stoney Indians had no more right than the whites to hunt out of season and quoted from their treaty the following extract: "And Her Majesty the Queen hereby agrees with her said Indians that they shall have right to pursue their vocations of hunting throughout the tract surrendered as heretofore described, subject to such regulations as may from time to time be made by the Government of the country, acting under the authority of Her Majesty".

Until 1911, it would seem that methods of transporting stock and conditions of stockyards left something to be desired. The railway companies often provided box cars instead of stock cars, and although this was not too satisfactory, few complaints were received since shippers preferred box cars to no cars at all. But in many cases the railway companies required the shippers to provide their own planking for barricading the doors, and since it cost $1.25 for each door a certain amount of grumbling arose.

Shippers complained too that they were subjected to long delays and their animals kept in the cars for forty, fifty, and sometimes sixty hours without feed or water. Others protested the long delays in getting their cars spotted for unloading after reaching their destination, and some were unable to get information as to when they would proceed through a divisional or junctional point. There were also complaints of overcharging in cases where box cars had been supplied in lieu of stock cars.

These matters, taken up by the livestock associations and the department of agriculture with the Board of Railway Commissioners, resulted ultimately in regulations for improved conditions and provided prosecution and penalties for infringement.

Early in the spring of 1913, S. G. Carlyle of Ontario joined the Department of Agriculture to take charge of the dairy herds on the demonstration farms. He came to the Department with a high reputation as a practical dairy farmer and was to remain with them for many years, later becoming Alberta's Livestock Commissioner.

The year 1913 showed a marked decline in the prices for horses. One cause was that of financial stringency in the province generally, which had resulted in curtailment in building operations, railway construction and municipal improvements and reduced the demand for work horses. Other causes were the use of the "motor delivery truck and the steam and gasoline tractor for the cartage work in our cities". In spite of this, prices for horses were considered sufficiently high to cover cost of their production and rearing and ensure a profit to the breeder.

Expansion of the sheep industry was now reported. Ranchers were enlarging the size of their herds, and farmers were "realizing the value of sheep as soil packers and weed destroyers" and were using them on their summerfallows. Around a 25 per cent increase in Alberta's sheep population during 1913 was recorded over 1912.

Swine production was also receiving attention and producers were being warned of the dangers of disease. Livestock Commissioner W. F. Stevens, wrote that the time had arrived when feed lots in which hotel slops were fed to swine "should be subjected to inspection with a view to safeguarding the health of herds in the immediate vicinity and to protecting the swine industry of the province against a general epidemic of hog cholera and swine plague". Breeds represented in the province by one or more herds in 1913 were Yorkshires, Berkshires, Tamworths, Duroc Jerseys, Hampshires and Poland Chinas.

With the coming of the war the Livestock Commissioner noted: "Progress in the livestock industry of the province was not as general nor as uniform in all its branches during 1914, as was the case during the two years preceding. The financial stringency, which resulted in a general cessation of railway and municipal development; erratic climatic conditions, and the war in Europe all had a detrimental effect on one branch of the industry or another".

The horse market was sluggish and prices dropped although good farm teams were still bringing $250 to $350 each.

Cattle, except in the drought stricken area of the south east, did well. There was little disease, and hay and pasture were abundant. Grain prices rose as a result of the war and few cattle were put on grain feed for the spring market of 1915. The American market was the principal outlet for Alberta's surplus cattle during 1914 and they sold to better advantage in Chicago than in Edmonton or Calgary.

The sheep industry showed uniform progress. Early in the year permission was granted to flock masters to graze their animals in the Forest Reserves. "Upwards of 30,000 head were driven to these reserves for summer grazing and very satisfactory results were obtained".

Nineteen-thirteen and nineteen-fourteen gave cause for much soul-searching among the people of Alberta. Deputy Minister of Agriculture George Harcourt, in the Department's Annual Report for 1914 noted:

> **Back to the Land** — The financial stringency and the collapse of the real estate and building booms in 1913 had their effect

> upon agriculture. This was intensified by the outbreak in August of the biggest war in history. The money to be made in real estate attracted many people from the land. Many moved to the city to engage in speculation, while others left their homesteads once they had secured their patent, in order to educate their families, in the meantime finding work with their teams hauling coal, brick, sand, gravel etc. This condition prevailed for some years, but 1914 saw nearly all these people back again on the land. It was an unhealthy condition as nearly forty per cent of the population of the province was to be found in the cities, towns and villages.
>
> In addition to those who left the land for a good excuse and have now gone back again, there were many others of the city who through lack of employment were compelled to leave the city and town to work on the land. The people of the province are realizing as they never did before that the soil is the greatest producer of wealth there is and that life on the farm offers possibilities little thought of during the last few years. It is to be hoped that the lesson, severe as it may have been, will be the means of establishing on the land a class of people who will stay, realizing that it is the best place to earn a comfortable living, to grow a family and to make a home, for that is after all the main purpose in any man's work".

It was in 1914 too, that Dr. Percy Talbot joined the staff of the Alberta Department of Agriculture as Provincial Veterinarian. He was an old-timer in the province, having arrived, with his family from Ontario, at Fort Macleod in 1889, and moving with them to the Lacombe district in 1892. He came to the department with wide experience as a veterinarian from the Veterinary Service of the Dominion Government.

His new duties were to include a series of lectures at the recently opened Schools of Agriculture at Vermilion, Olds and Claresholm, as well as investigating outbreaks of animal disease in the province and attending to the health of the livestock at the provincial demonstration farms. These schools of agriculture and demonstration farms were the pride and joy of the then Minister of Agriculture, the Honourable Duncan Marshall, and he lost no opportunity of extolling the virtues of the schools and encouraging the farm boys and girls to attend.

Duncan Marshall had taken over as Minister of Agriculture on retirement because of ill-health of the first Minister, the Honourable W. T. Finlay in 1909. Born in Ireland, Mr. Finlay settled in the Medicine Hat district before the railway came and established a lumber business. He was interested in municipal affairs and became Mayor of the City. He later entered politics and was elected to the North-West Legislature. Mr. Finlay died in 1914.

With the outbreak of war in 1914, high prices for all meats were indicated. But the price of grains rose rapidly too, and since it was easier to sell the grain than to market it through livestock, a rush of livestock selling occurred and prices fell. The good market for hogs early in the year saw a tremendous development only to meet with bitter disaster in the early fall and winter. Horse breeders too were disappointed when an embargo was placed on export of horses from Canada, particularly when it was known that good prices were being paid in the United States by French, Belgian and other governments for horses for war use.

Removal of the embargo and improved conditions in 1915 met with general approval. Representatives of both the British and French Governments visited Alberta in their demand for horses. The Dominion Government also made purchases here. The Canadian and British demand was chiefly for transport and artillery horses while the French request was chiefly for cavalry. British, French and Dominion horse purchases in Alberta during 1915 amounted to 4,000 head.

Interest in sheep continued to increase and high prices were being paid for both wool and mutton. Herders were also taking advantage of the large areas of unenclosed land held by speculators in municipalities where pound by-laws had been adopted. "As the pound by-law prohibits animals from running at large, and as few stockmen think it pays to herd horses or cattle, these disappear, and bands of sheep, which are always accompanied by a herder, take their place and derive the benefit of the pasturage thus made available", said a report of the time.

A Sheep Trailing Act gave farmers the protection they had asked for against careless herdsmen who allowed their sheep to enter grain fields while being driven from one part of the country to another. As an instance of the conscientious herdsman it is recorded that Ray Knight trailed 14,000 head in 1915 from the Lethbridge district to Provost, a distance of approximately 300 miles, "yet there was not one complaint sent to the Department on account of trespass or damage done on the way".

The year 1915 saw an event that was to influence Alberta sheep production down through the years. This was the introduction in the fall of that year of the Romney Marsh breed by R. C. Harvey of Raymond. He brought in from Oregon eighteen American bred Romney ewes, seventeen American bred rams and one New Zealand bred ram. Crossing these Romney Marsh with Rambouillets, Mr. Harvey found that the progeny had much to offer from the standpoint of both mutton and wool, and his sheep soon created a favourable impression among the sheepmen of Western Canada. When, after a few years, it became necessary for Mr. Harvey to dispose of his flock, they soon became mixed and lost their identity as a distinctive type.

In 1935, at the request of sheepmen who recalled the merit of the Harvey sheep, a sheep breeding program was started at the Manyberries Range Experiment Station. Romney Marsh rams from Oregon were mated with selected native Rambouillet ewes, which, following a consistent policy of inbreeding and rigid selection, resulted in creation of the Romnelet breed.

In 1917, sheepmen of the prairies took advantage of arrangements to graze their flocks in the Forest Reserves tributary to the Crowsnest Pass. The C.P.R. granted a reduction of 25 per cent on outgoing shipment and the service thus provided was so satisfactory that 35,000 head were transported with the death of only one aged animal. "In no instance", says the report, "did any lamb fail to find its mother within two hours after being unloaded". For production of lambs, the pasturage of the Forest Reserve was reported far superior to the short grass of the southern prairies, but for finishing wethers and fattening dry ewes the prairie pastures proved preferable. The estimated population of sheep in Alberta in 1918 was 400,000.

In 1921, the tariff imposed on Canadian cattle entering the United States offered cause for alarm. Alberta stockmen had considered Chicago their natural market, and the tariff forced prices so low that stock was sold at a loss. Cattlemen again turned their attention to the British market and in spite of high rail and ocean rates, returns were fairly satisfactory.

In the fall of 1921, both grain and livestock prices were the lowest they had been since the end of the war, and by October well finished steers were selling around $4.00 per one hundred pounds. Raising of the British embargo in the fall of 1922 helped to some extent to relieve the situation. During the embargo, Canadian cattle entering Britain were slaughtered within ten days of arrival, and none left the wharf alive.

In effect since 1892, this embargo had resulted from a cow brought in from Canada alleged by British veterinarians to be suffering from contagious pleuro-pneumonia. Controversy was aroused as to the exact nature of the ailment but the embargo went into effect. For thirty years stock raisers of Canada sought its removal, but in spite of acknowledged high standards of health of Canadian cattle the embargo was maintained. It was not until 1922, following the visit to Britain of that intrepid newspaper woman and champion of Western agriculture, E. Cora Hind, that the embargo was removed.

In 1895, George R. Parkin ("The Great Dominion"—Macmillans Colonial Library) wrote: "The clear, cool climate of the Dominion has proved exceptionally favourable to the health of cattle, and the scheduling which has been enforced for some time rests upon evidence so doubtful that the order will probably soon be withdrawn." Twenty-seven more years were to elapse, however, before the order was withdrawn and the embargo lifted.

Parkin remarked also: "In 1872 Canada had exported no meat, live or dead, to Great Britain. The numbers of live cattle sent had already risen in 1891 beyond a hundred thousand annually, and yet this does not represent more than a fifth of what the British market absorbs".

He speaks too of an experiment being carried out with a view of reaching distant markets rapidy and effectually "Large numbers of cattle from the Cochrane Ranch", he said, "were being killed in abattoirs at Calgary, and the chilled beef was being sent to the cities of Eastern Canada in cars specially arranged for the purpose.

The meat was received at Montreal and Ottawa in perfect condition, competing successfully with the best that local markets could supply".

The year 1943 marked an important step in cattle improvement in Alberta. During the summer of that year an artificial breeding centre was set up at the Olds School of Agriculture, with W. H. T. Mead as Supervisor.

The work was originally directed by an Advisory Committee composed of James Murray, Principal, Olds School of Agriculture, Chairman; O. S. Longman, Deputy Minister, Alberta Department of Agriculture; Dr. P. R. Talbot, Provincial Veterinarian; Professor J. P. Sackville, University of Alberta; A. W. Ross, Farm Manager, Olds School of Agriculture; John McCulloch, C.P.R. Agricultural Representative, representing the Alberta Holstein Association, and W. H. T. Mead, Secretary. Mr. McCulloch was later replaced by J. W. Hosford. The first calves born to artificial service in Alberta were calved on the farm of H. L. Ahrens of Red Deer in 1944.

The breeding centre at Olds operated from late 1943 until December 31, 1956. During that time 11,460 cows, 4,622 of which were registered Holsteins, were inseminated from that centre. There was a great impact during that period on what was later to become a widespread practice, said Mr. Mead in 1963. That was the practical extension work that acquainted cattle producers with the possibilities, limitations and economic aspects of artificial insemination, he said.

The ground work carried on from the Olds breeding centre set the stage for general public acceptance of artificial insemination. With the advent of frozen semen and importation of both frozen and chilled semen from Ontario and British Columbia, came rapid expansion to most areas of the province.

In 1949, Mr. Mead was appointed Alberta's Livestock Commissioner, and in 1966 he became the Province's first Director of Animal Industry. Now in charge of artificial insemination is Supervisor H. B. Jeffery. During 1966, he reports, 91,973 cows were bred artificially in Alberta in around 8,400 herds. Of these 55,596 head were of the dairy and dual purpose breeds, and 36,377 were beef cows.

THE INDUSTRY GROWS

An important feature of prairie agriculture were the excursion trains. First, they brought in the settlers and later they brought in the eastern harvesters to help those settlers with their fall work.

In the early years, land offices were crowded and the cities of Edmonton and Calgary found difficulty in arranging accommodation for the rapid influx. The April record in homesteads in 1911 was fifty per cent over all others, and during that month nearly 1,000 entries were made in the Edmonton land office alone. Every entry was made by a recent arrival in the province. Many had brought families with them and went directly to the land of their choice.

Alberta government agents met newcomers at Montreal, Toronto and Winnipeg, pointing out the prospects of the new Province of Alberta and inviting settlement there. From Toronto, three special excursion trains, and nine parties containing twenty to fifty settlers each were organized and dispatched during 1911 by the Alberta Commissioner there.

The Winnipeg office too was busy and in that same year 8,500 extra harvest hands were dispatched to Alberta to help with the harvest of settlers already established. Special commissioners in Michigan, Minnesota and Montana also did much towards settlement in Alberta of people from those States.

The harvest excursion continued year after year, and many of those whose first experience of the west was in the form of this seasonal work, later returned to settle on the land. In 1913, the railways granted a rate of one cent a mile to labourers going into the harvest from Edmonton and Calgary, and from the homestead districts too. This relieved congestion of unemployed in the cities and offered an opportunity to hundreds of homesteaders to reach work with a small outlay.

There were years like that of 1914 when a lower than normal yield made it unnecessary to import harvest help. In that year, special rail rates were allowed within the province only. Around 1,500 men, all of whom were homesteaders, were transported to the harvest fields in the various parts of the province. With the exception of that year, Alberta had received from five to fifteen thousand harvest help annually from outside sources.

During the past decade, the province had grown rapidly and by 1915, 3,668,238 acres were under crop compared with 591,614 acres in 1906. In 1915, 164,332,483 bushels of grain were threshed of which 58,830,704 were spring wheat, 1,257,985 winter wheat, 90,582,694 oats, 12,761,189 barley, and the remainder flax, rye and speltz.

In spite of the war, immigration continued although at a decidedly slower rate. In 1916 there were 5,074 homesteads, 465 pre-emptions and 63 purchased homestead entries in Alberta. Four special commissioners were sent to the States from Alberta, and many people were met who felt that Alberta might be their future home but preferred to wait until after the war before moving.

From the early days of the province, the Department of Agriculture had advocated the keeping of livestock and growing of forage as the country became settled and less wild pasture became available. "To the man who is farming a quarter or half a section in southern Alberta where wild lands cannot be rented, the supply of good pasture is a serious problem", said Livestock Commissioner S. G. Carlyle. To supplement wild and tame grass pasture, he advocated sowing fall rye in July or August, or a mixture of winter wheat and oats in the spring. The oats-wheat sowing was ready for pasturing about the time the rye was becoming hard and bitter.

This was the year that a system of district agents was first established in Alberta. Men from the schools of agriculture were stationed at Vermilion, Stony Plain, Olds, Sedgewick and Claresholm. Since the start of the demonstration farms in 1911 and the opening of the schools of agriculture in 1913, the staffs had been available locally for information and advice. But this was the first year they had been definitely identified as district agents. Nor were they the fully fledged district agriculturists as we know them today. The work of those first district agents consisted of carrying on boys' and girls' clubs. Garden seeds, potatoes and eggs were distributed, the children visited in the schools and instruction given. The homes of the children were also visited, and the work well received by both children and parents. "It is hoped," said the report, "that this work may be extended in future so that the agent may give assistance to the farmers".

In 1917, for six months during the summer, this school fair work was continued. The agents, all from the schools of agriculture, were W. G. Payne, Vermilion; H. W. Scott, Sedgewick; H. H. McIntyre, Stony Plain; J. G. Taggart, Olds, and J. C. Hooper, Claresholm. In June, Mr. Taggart enlisted and was replaced by E. E. Brown. Dr. Taggart once mentioned how disappointed he was when he was called up before the commanding officer one day in October or November of that same year, and told that his discharge had been requested by the authorities because of his knowledge of agriculture and the civilian need for his services. He went back to the Olds School of Agriculture in February, 1918, to teach science.

These district agents in 1917 followed the same procedure as in the previous year. School fairs were held in the fall and prizes were awarded. This year too saw some assistance to adult farmers, although with the time limited to six months and the wide area covered in school fair work it was difficult to develop the adult phase to the extent desired. It was felt, even then, that if these agents were permanent in their districts there would be far greater opportunity for better acquaintance with the farmers. Addresses were delivered at Farmers Institutes and at the meetings of the United Farmers of Alberta. Assistance was given with identification and control of noxious weeds and contagious and epidemic diseases of livestock were reported.

In 1918, southern Alberta suffered from severe drought and northern areas from heavy frost, and the question arose of providing sufficient feed for the livestock of the province. The north had a surplus of rough feed and the problem was to get the feed to the livestock of the south or the livestock to the feed.

This was solved following a meeting in Winnipeg of representatives of the railway companies and the Dominion and Provincial Governments. The railways agreed to charge only fifty per cent of the regular rates on livestock going north for feeding, and on feed shipped south. Further, the Dominion Government agreed to pay that fifty per cent, which meant that livestock was shipped north and feed shipped south at no charge to the farmers concerned.

Under this arrangement, 31,351 cattle 59,405 sheep and 182 haymaking outfits moved north. Hay shipped south amounted to 86,438 tons. Although rain in the south considerably improved the feed situation later in the season, the policy providing for free shipment saved from slaughter a large portion of the breeding stock of the south.

But worse was to come. Following a mild winter with stock coming through in good condition, the spring opened early. That was in 1919. There was enough moisture to germinate the seed and for a short time the young crop grew well. Then came heavy winds, and the moisture disappeared. The summer progressed, and in the south not enough rain fell at any time to thoroughly soak the ground. Many districts of central and northern Alberta fared better and in the Peace River country good crops were harvested.

Again arrangements for free freight were made and the cost shared this time among Dominion and Provincial Governments and the railway companies. But the winter came early. The work of stacking and baling hay was interrupted and a snowstorm in October put an end to threshing.

Continued dry seasons in the south and southeast and consequent crop failures resulted in some farmers finding themselves without the necessities of life or the credit to obtain them. Offices for distribution of relief were established at Lethbridge, Medicine Hat and Youngstown and coal and groceries were provided, together with feed for a few milk cows and work horses.

The winter of 1919-20 was one of the most trying in the history of the province. It started in October with a large amount of crop still in the stook. The snow lay deep and feeding started one or two months earlier than usual. A severe winter and a late spring added to the farmers' woes. Feed was short and hay had to be shipped in from Manitoba, Ontario and Quebec throughout the winter. Around three thousand cars of hay were purchased by the Alberta Department of Agriculture and sold to farmers at cost. In spite of this, stock losses were heavy.

The growing season of 1920 was favourable in many parts of the province. There was plenty of feed for livestock and the largest amount of grain that the province had yet had for export. Crops in limited sections of the south, however, were again short, and the havoc of soil drifting was making its appearance. "Certain sections of the southern part of the province experienced an exceedingly heavy windstorm in the early part of June", wrote Deputy Minister of Agriculture H. A. Craig in his report for 1920. "Approximately 50,000 acres of crop was blown out or covered and an additional area destroyed".

The following year, 1921, was not a happy one for the farmer. The post-war slump was now in effect and in an effort to alleviate and possibly control conditions, the provincial election of July had replaced the Liberal Government with one of farmer representatives. The United Farmers of Alberta government that was to control affairs until its defeat during the depression of the 1930's now took office. As hard times had brought in the farmer government, so hard times in 1935 removed it.

And 1921 was indeed a difficult year. Prices for most farm products had dropped, while the cost of things the farmer had to buy had not decreased. Loans from the banks were restricted, and farmers had to reduce the scope of their operations. The demand for grain during the war, with correspondingly high prices, had encouraged grain growing at the expense of livestock production. But with the fall in grain prices thoughts again turned to the advantages of the mixed farming venture. There was again a demand for good breeding stock, particularly dairy cattle, bacon hogs, and poultry.

Portions of southern Alberta again experienced crop failure, and a survey board was set up by the provincial government to study conditions and make recommendations. Members of the Board were C. A. Magrath, W. H. Fairfield, A. A. Carpenter and G. R. Marnock. They were convinced that the south had a future and urged help in the purchase of seed, feed and other necessities. In the late summer of 1922, a number of farmers in south-eastern parts of the province requested help to move to locations farther north. Owing to repeated crop failures they were unable themselves to pay the cost of moving.

Arrangements were sponsored by the Dominion and Provincial Governments and the Canadian Pacific and Canadian National Railways for settlers in the dry areas to obtain free shipment to other districts. The railway companies accepted each shipment at two-thirds the regular freight rate, and the two governments shared this charge equally between them.

The natural resources of Alberta were still administered by the Department of the Interior, and on May 23, 1923, an Order-in-Council in Ottawa provided one quarter section as a second homestead to settlers, who, from drought, had lost their original homesteads. Only those whose homesteads were located south of the south boundary of Township 31 were eligible.

The movement continued through 1926, at the end of which year 1851 families with 3,179 carloads of settlers' effects had been moved. Some travelled north in Alberta and others moved to northern Saskatchewan. In Alberta a number found new locations west of Wetaskiwin, and some pushing farther north, settled between Athabasca and Smith. Others again, moved into the irrigated districts and in the districts south of Calgary along the Calgary-Macleod and Aldersyde-Cardston lines of the C.P.R., and in the Pincher Creek, Raymond and Cardston districts. A number moved into the Lethbridge Northern Irrigation District and into the United Irrigation and C.P.R. Irrigation districts.

All in all though, 1924 was a good crop year for the farmers of Alberta. There was a light crop in the southeast but good crops elsewhere, and Alberta was again looking forward to better times. Dairying had made rapid improvement but it was becoming evident that the greatest weakness of the industry was the low average production of the dairy cows of the province. This is not to say that there were not some excellent animals. As far back as 1911, Red Deer was in the limelight as a result of the champion "Rosalind of Old Baring", property of Julian Sharman. This animal had, in a twenty-four months official test ending May 23, 1911, surpassed the previous highest butter record in Canada by giving a milk equivalent of 1475 pounds of butter.

Hog raising was making progress and production of Wiltshire bacon for the British market was becoming a paying business. Around four hundred thousand more hogs were exported to Britain in 1924 than in 1922. Said Deputy Minister H. A. Craig in his 1924 report:

> It would appear that the prairie provinces of Western Canada are facing a period of new development. We have passed through during the last decade, one of the most serious and

> trying times in our history; it would seem that we have turned the corner and that we are at last in sight of better times. It is evident on every hand that a tide of immigration is commencing to flow to Western Canada. We do not hope or look for the boom days of 1912, but we confidently look forward to the steady substantial development of the great plains sections of Western Canada. In this development it is essential that our agriculture be maintained on a sound basis, otherwise no material advancement can be made and reaction is sure to come eventually.

This was the year too, that for the first time in the history of the institution, the University of Alberta was represented in the Livestock Judging contest of the Royal Agricultural Winter Fair at Toronto and the International Livestock Exposition at Chicago. The Alberta team won the coveted Macdonald trophy offered for competition among teams of five men from each of the four western Universities. And there were some well-known names on that team, men who later rose to prominence in Canadian agriculture. They were T. P. Devlin, C. K. Johns, W. Gentleman, J. M. McAra and L. B. Thomson. Professor J. P. Sackville was their coach. T. P. Devlin became Director of Colonization and Agriculture for the Canadian National Railways at Winnipeg. C. K. Johns was Director of Dairy Technology Research for the Canada Department of Agriculture at Ottawa. L. B. Thomson was Superintendent of the Canada Department of Agriculture Experimental Farm at Swift Current and later Director of Prairie Farm Rehabilitation. W. Gentleman was long associated with the Alberta Department of Agriculture.

Steady improvement in agricultural conditions in 1928 and reasonably good prices for grain and livestock produced a feeling of optimism. Combines and swathers were coming in on a larger scale and a survey showed 1,095 of these machines in operation in the province in 1928.

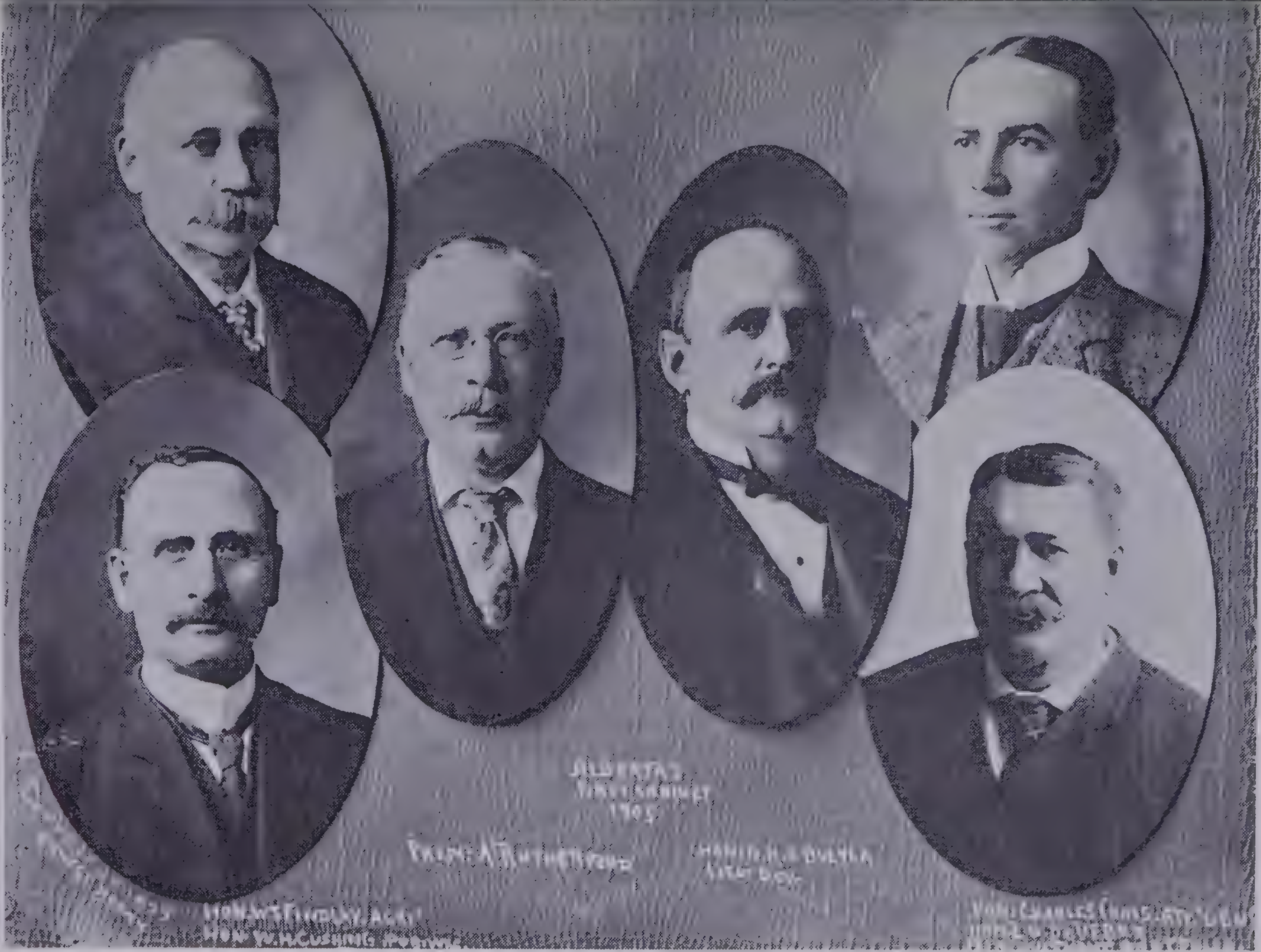
Chemicals for weed control were arousing interest and the Alberta Department of Agriculture began a series of tests with chemicals on the market for eradication of sow thistle, Canada thistle and quack grass. Chemicals with chlorates as a base were reported most effective and arrangements were made with the National Research Council to continue the tests further.

But it was not until the 1940's that the real breakthrough in the form of selective weed control occurred. The chlorates could not be used in growing crops, but as soil sterilants they proved useful in eradicating some of the persistent perennial weeds on farms, roadsides and railways. In the prairie provinces, sodium chlorate came into common use and quickly found a place in the weed control programs of Alberta municipalities. Introduction in 1945 of the hormone weed killer 2,4-D heralded the dawn of a new era in weed control. Other growth regulators like 2,4,5-T and MCPA followed quickly and a long-time problem seemed well on its way to solution.

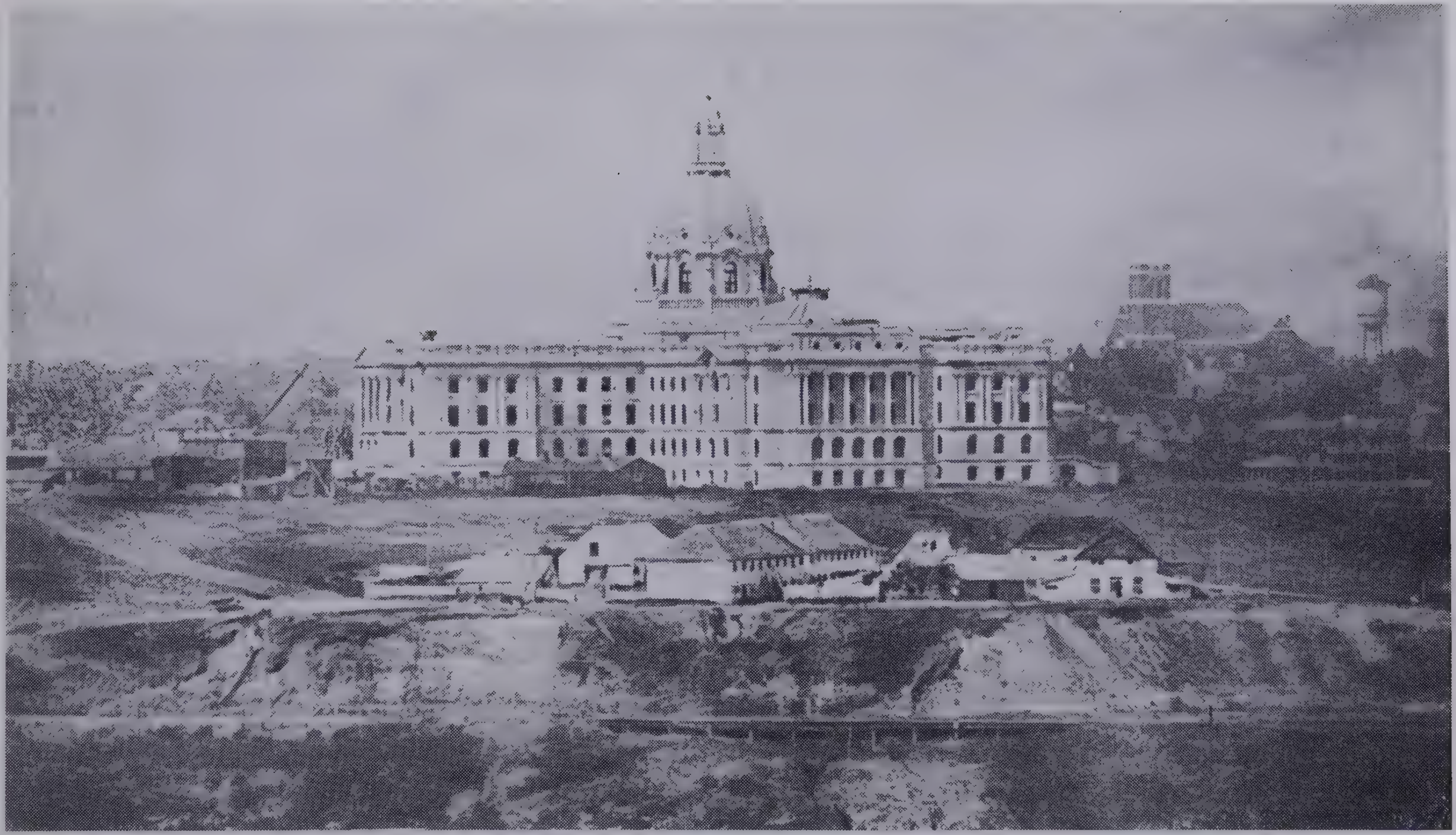
Since that time rapid advances have been made in discovery of herbicides, which while effectively destroying weeds in the crop leave the crop relatively unharmed. With the selective wild oat killers Avadex and Carbyne further progress was made, and the more recent introduction of Dicamba, following intensive work in the University of Alberta's Department of Plant Science by Dr. W. H. Vanden Born, provided a long-desired opportunity for eradication in cereal crops of the rapidly spreading and persistent Tartary Buckwheat. A great deal of work has since been done in this field and many selective chemicals for use in cereal, forage and vegetable crops are now available.

But the beginnings of selective weed control in Alberta go much farther back than this. In 1911, recommendations were in vogue for destroying wild mustard in cereal crops. Here's what the Alberta Department of Agriculture had to say in the report for that year:

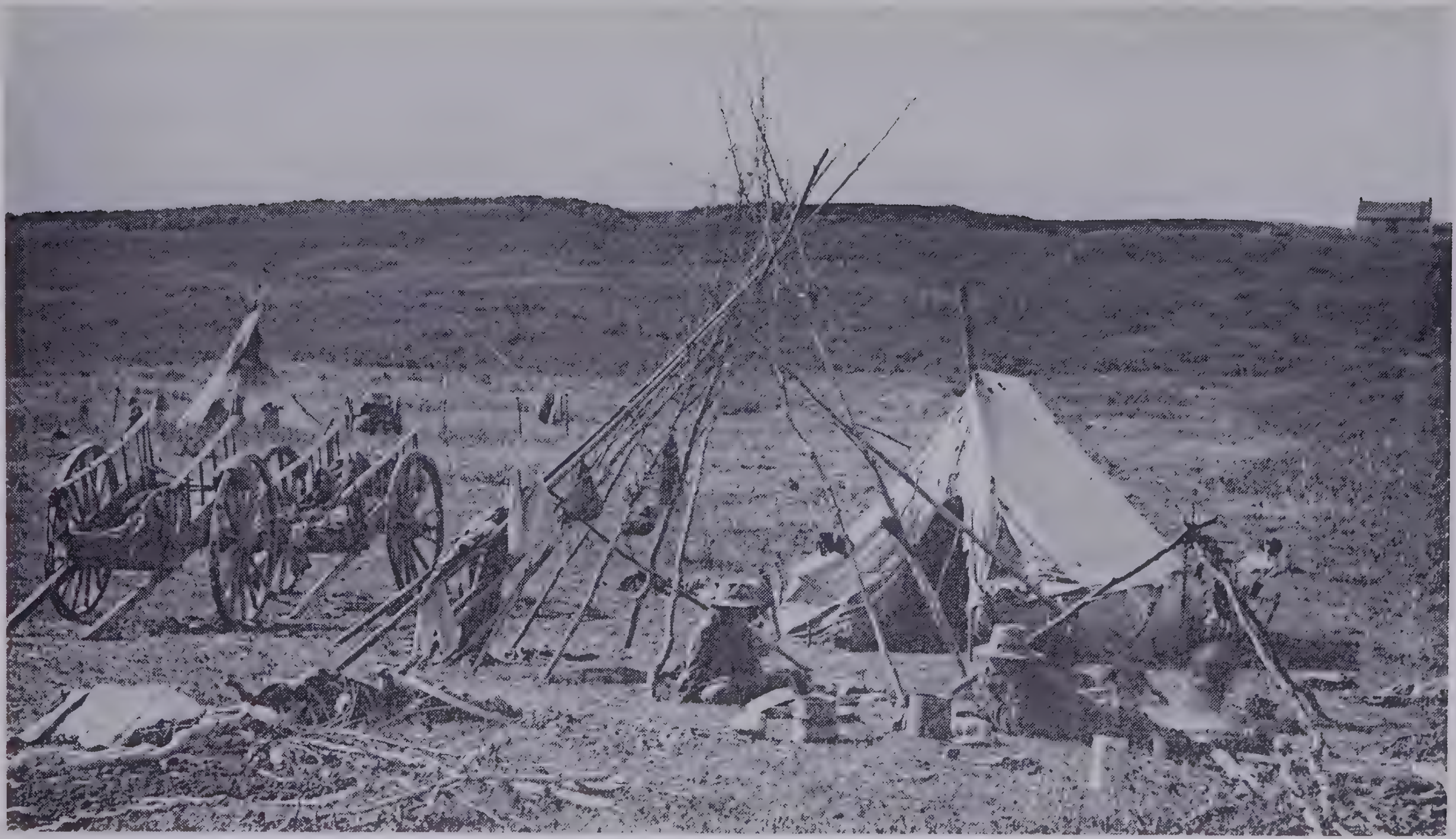
> Repeated tests at the various experiment stations in the United States and Canada have proved beyond doubt that solutions of bluestone (blue vitriol or copper sulphate) or of copperas of iron sulphate can be used successfully to destroy wild mustard in cereal crops without injury to the growing grain. The results of the majority of experiments would seem to indicate that iron sulphate is on the whole more satisfactory for this purpose than copper sulphate, besides being somewhat less expensive.
>
> Mustard spraying can be successfully done with a hand sprayer attached to a forty gallon barrel, or any sprayer which will



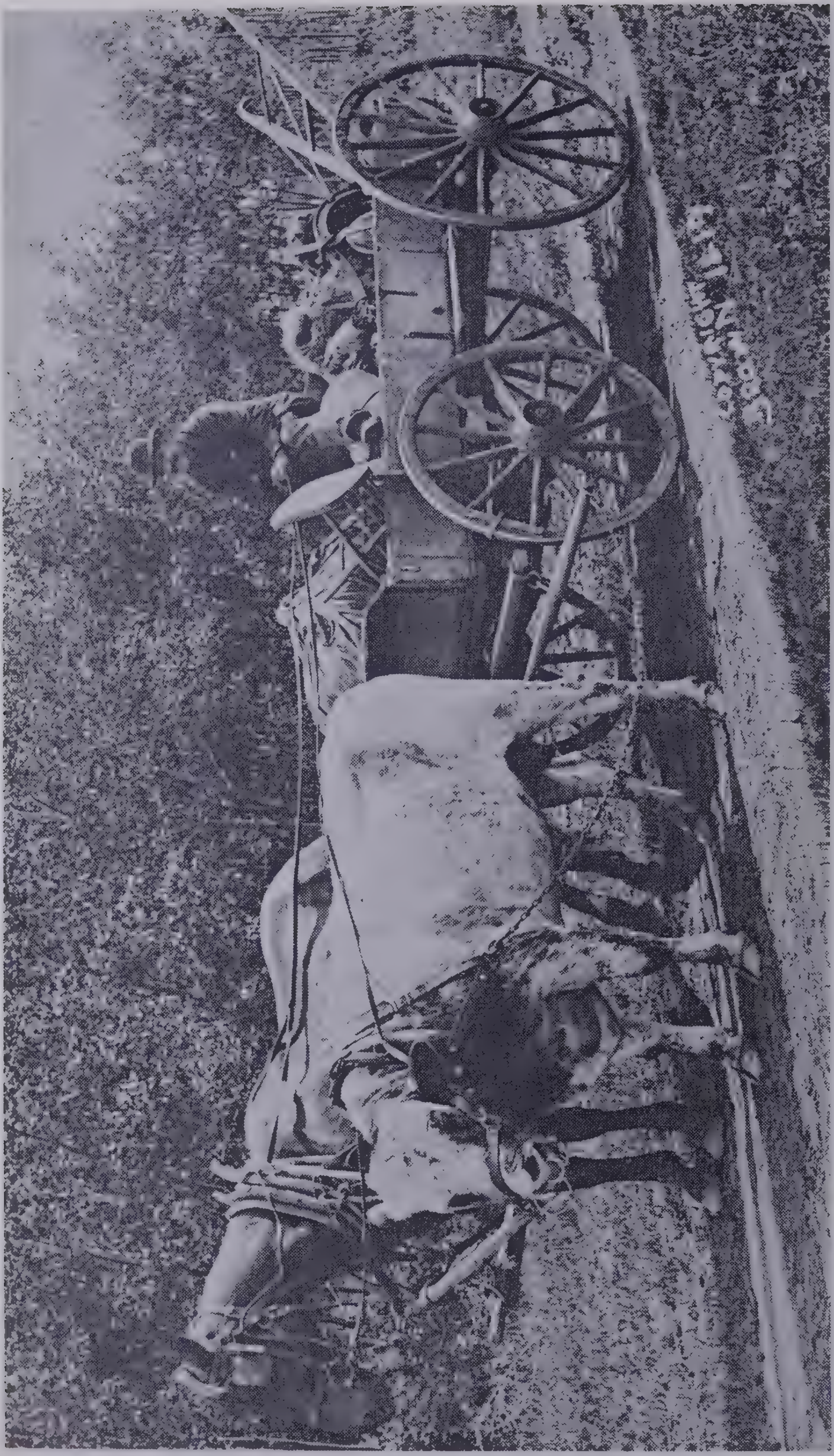
Alberta's First Cabinet



Old Fort and Parliament Buildings

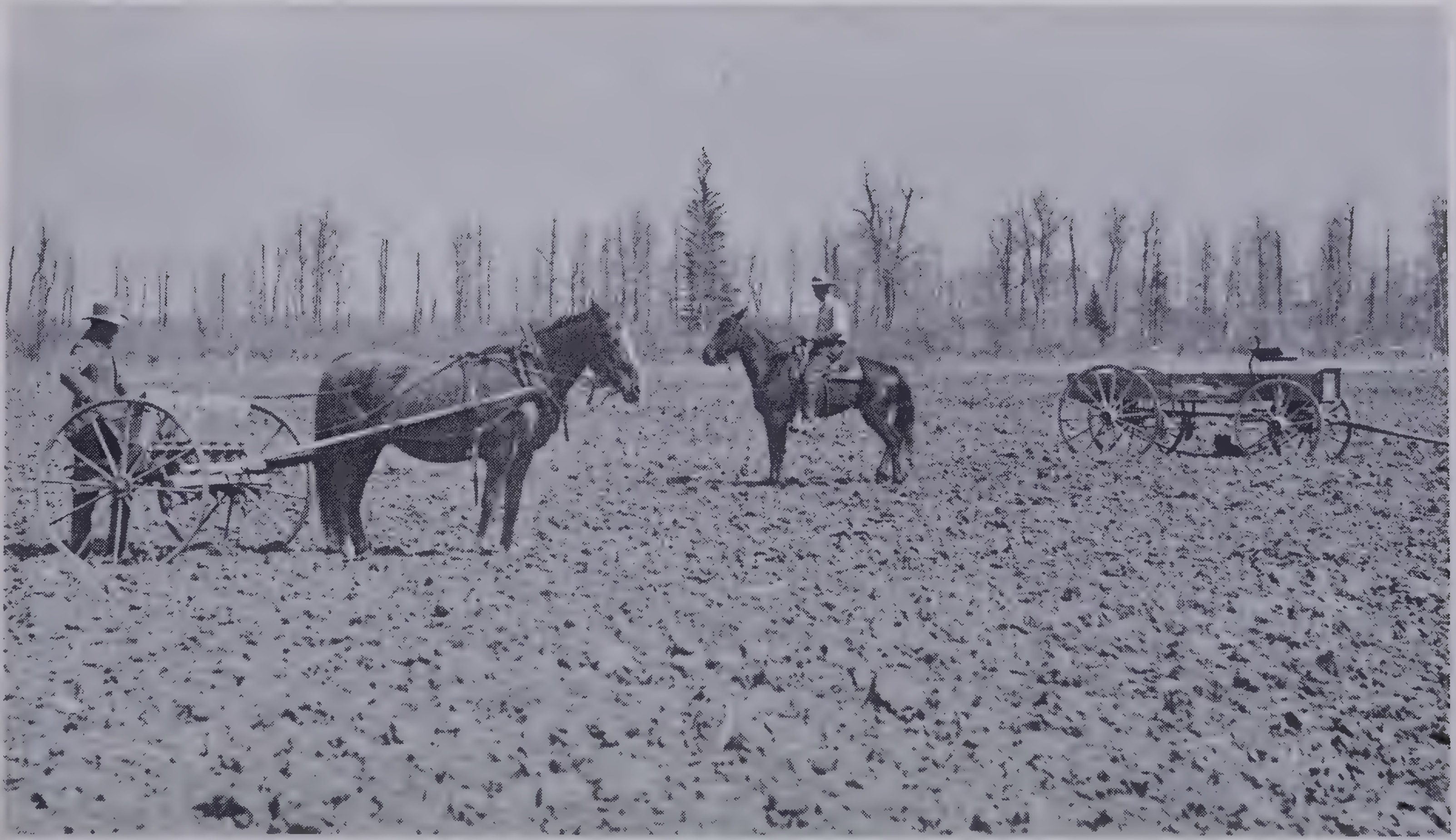


A Typical Indian Encampment 1890, Showing "Big House" Where Parliament Buildings Now Stand.



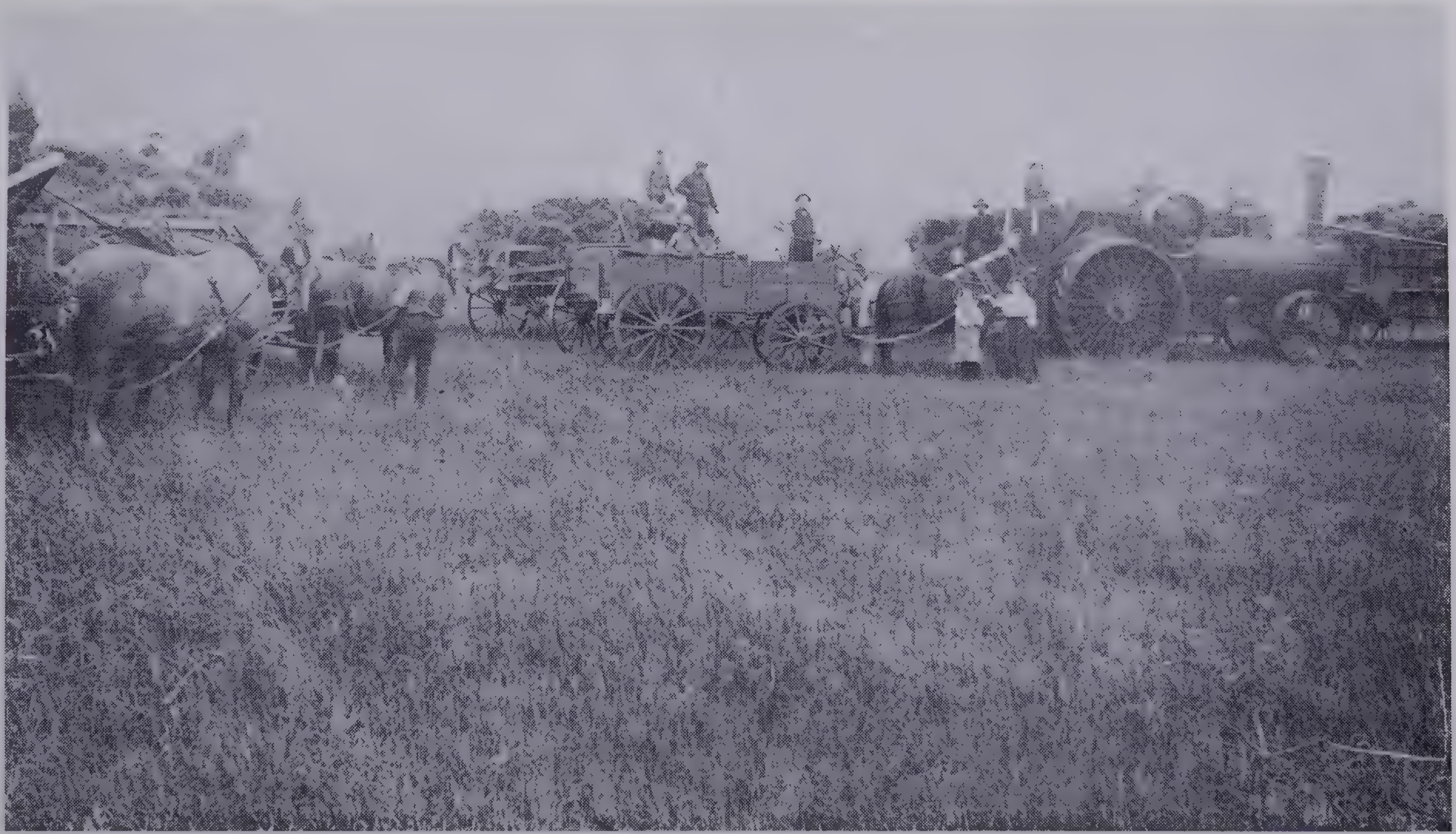
Necessity Knows No Law

Breaking The Prairie



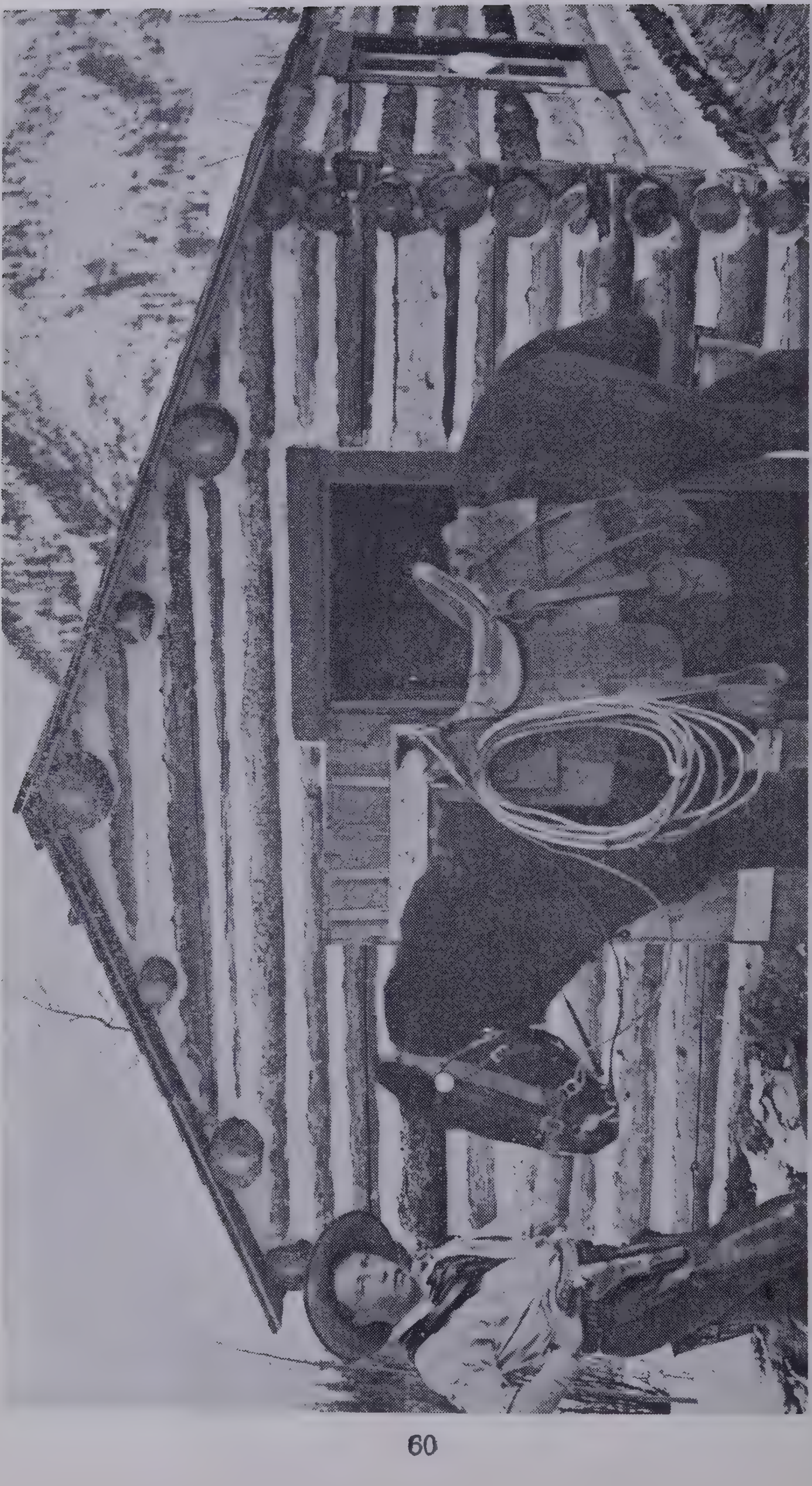
Seeding in 1886

Breaking The Prairie

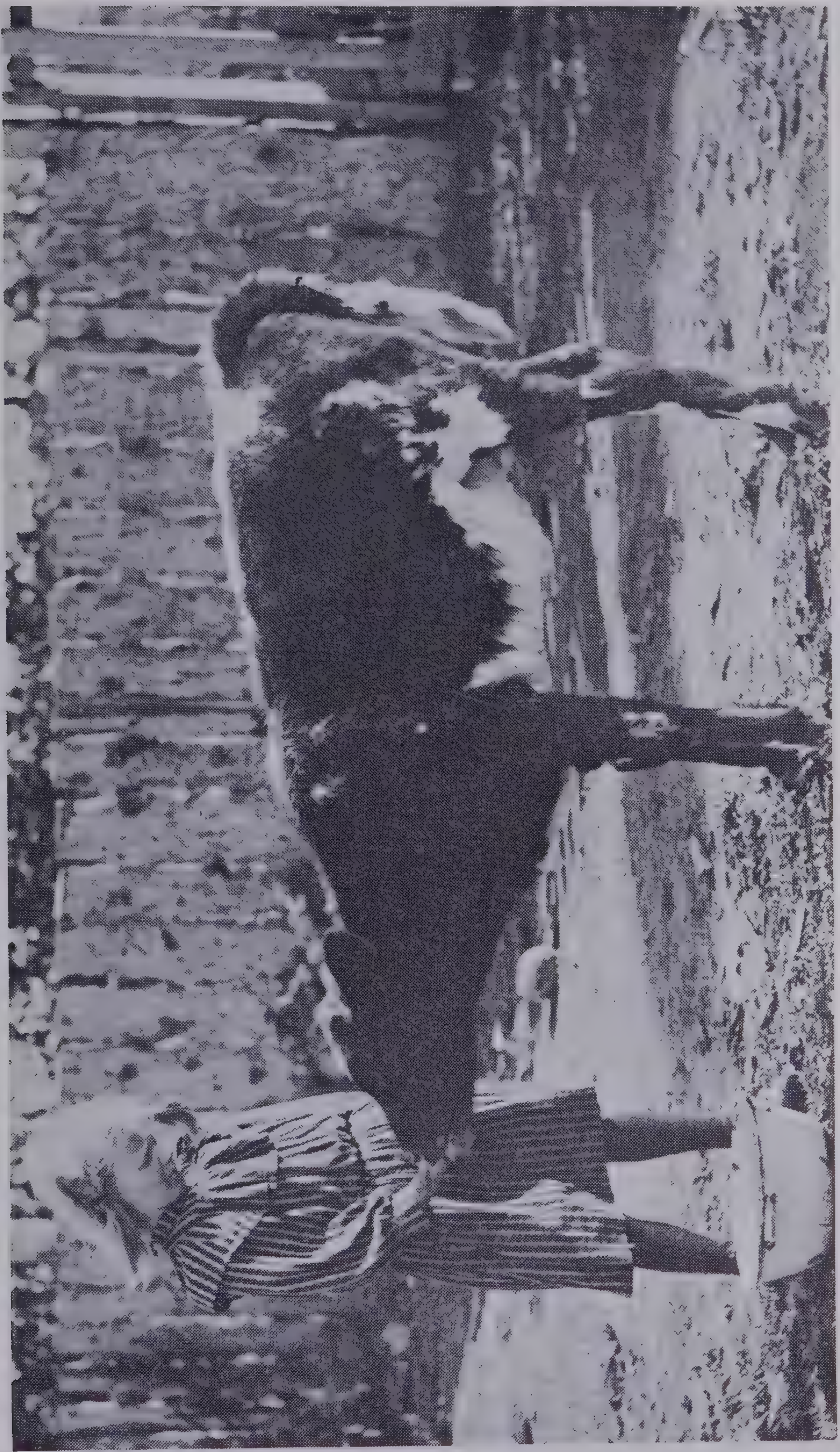


Threshing Outfit, 1910

"Another Trail Cut Off"



Ranching in the Foothills, 1890



Little Girl Feeding Calf

Sheep Ranching in Alberta 1885, Senator Cochrane's Ranch, West of Calgary

> throw a fairly fine spray forcibly upon the plants. It was thought more practicable to use a power outfit for this purpose in connection with the demonstrations conducted by this department. The outfit purchased has a 100 gallon tank and pump, mounted on two wheels, and power for pumping is generated by a gearing attached to the wheels. By means of an air tank a pressure is necessary in order to force the spray through the leaves of the grain upon the leaves of the mustard plants. The spray was distributed through a hollow tube 12 feet in length with nozzles attached 2 feet apart along the entire length of the rod.
>
> A 20 per cent solution of iron sulphate was used. This was made by mixing 80 pounds of iron sulphate with 40 gallons of water. A stronger solution than this is liable to injure the crop. If copper sulphate is used a two per cent solution (one pound copper sulphate to five gallons of water) is sufficiently strong.
>
> Spraying should be done on a bright sunny day when the young mustard plants are well up and just about to come into flower. If the solution is applied too late—for instance if the seed pods have been formed—the tougher stalks will not be entirely killed, a few seeds will be produced and the results will not be entirely satisfactory.
>
> The spraying demonstration initiated by this department was held at Olds under the supervision of Mr. H. W. Scott, at that time manager of the demonstration farm in that place.

By 1929, it was becoming increasingly recognized that the rich prairie soils would not continue to produce indefinitely without some return of fertility. With superphosphates obtained free of charge from the Trail smelter in British Columbia, test plots were set up at Raymond, Claresholm and Olds Schools of Agriculture and at the Lethbridge Experimental Station. Farmers at selected locations also co-operated on five- to ten-acre plots. One hundred pounds of superphosphate per acre on wheat and oats were used on both summerfallow and spring plowing. Results varied, but since in many cases maturity was hastened and yields increased, it was decided to continue the tests.

Little was heard of fertilizer use in the next few years of depression and war, but in 1939 the Advisory Fertilizer Committee appointed by the Alberta Minister of Agriculture published their "Tentative Suggestions for Use of Fertilizers in Alberta". Triple superphosphate and ammonium phosphate 11-48-0 and 16-20-0 formed the basis of the recommendations. Testing by the University of Alberta Department of Soils and the Dominion Experimental Farms continued and recommendations by the committee were made periodically. Early tests were chiefly with wheat on summerfallowed land, but later work involved grain crops on stubble and forage crops for both hay and seed. Tests on forage crops began with amounts found suitable for cereals, but as the work progressed it was found that far larger amounts could profitably be used on forage.

In 1947, Dr. J. D. Newton, Head of the University of Alberta Department of Soils, reported to the National Committee on Soil Conservation meeting in Lethbridge, that around 25,000 tons per annum of commercial fertilizers (chiefly phosphates) were in use in the three prairie provinces. In 1966, over 316,000 tons were being applied to the soils of Alberta alone.

DROUGHT AND DESPAIR

Throughout the 1920's, drought, soil drifting and grasshoppers combined to play havoc with farming on the southern semi-arid lands, while varied success attended crop production in central and northern regions.

It was in 1918 that the trouble with grasshoppers really started in Alberta. In the dry summer of that year, grasshoppers in unusual numbers invaded southern Alberta, but no serious damage was noted. The year 1919 saw a spread of the insects and considerable local damage was done. In 1920 and 1921 further increase and spread took place and in 1922 an all-out battle waged. Supplies of poison were provided by the Department to municipalities at cost, and staffs of the schools of agriculture were called on for educational and control work.

The two-fold enemy of grasshoppers and drought worked together, and in some districts farmers ceased control methods when they found they would in any case lose their crops from drought. In spite of the control effort, it was estimated that in 1922, crops to the value of $1,158,813 were destroyed by grasshoppers. Roadside grasshoppers were widespread throughout the province, while south of the main C.P.R. line, the lesser migratory and two-striped grasshoppers also took their toll.

In 1923, the area infested was much reduced and by 1926 small outbreaks only occurred. It was in 1922 that E. H. Strickland, who had been employed for a number of years by the Dominion Government as entomologist at Lethbridge, was appointed early in the year as Professor of Entomology at the University of Alberta. He took charge of the field work of the grasshopper control campaign and as a result of his experiments cost of the bait used was considerably reduced. The bait in those days consisted of bran, sawdust, molasses, salt and arsenic, to all of which water was added. Mixing stations were set up throughout the infested areas.

In the late 1930's grasshoppers again became troublesome. Years of drought encouraged their increase, and from 1933 to 1939 there was a steady progression northwards. In the latter year, infestation, although light in this area, had reached a point north and east of Edmonton.

These ten years between 1930 and 1940 were described by Field Crops Commissioner O. S. Longman as “the most destructive and costly grasshopper plague in the history of Alberta”. During that period the total area subject to infestation and requiring supervision had exceeded 291,000 square miles, or sixteen times the then crop area of the province. By the summer of 1933, the plague area had increased to nearly 25,000 square miles and by 1939 the area infested reached a peak of 60,000 square miles, extending as far into central Alberta as Camrose and Lloydminster.

With continued experience and research, control techniques changed. The use of molasses was discontinued and the powdered white arsenic was replaced with liquid sodium arsenite. The year 1934 saw the introduction of sodium silico fluoride to replace the arsenite. This newer poison did away with some of the hazards to humans and livestock. While highly poisonous to insects, it was considered only mildly toxic to warm blooded creatures. Poison bait, which in 1931 contained equal parts of sawdust and bran as a carrier for the poison, consisted in 1940 very largely of sawdust with a small amount of feed flour.

By 1940, however, grasshoppers were again on the wane and the outbreak of 1941 was the lightest since 1930. These were still the days of poison bait, and not until the spray insecticide introductions of the 1950’s were more convenient and efficient control methods available.

Drought, the friend and ally of the grasshoppers, was a force in its own right. It had called for an occasional visit in the nineteen-twenties and earlier, but in the next decade its effects were so drastic that they could no longer be ignored. Rainfall at best is light in these southern areas, and when year after year the rain held off, the soil drifted in clouds that hung in the air and blotted out the sun. It seeped around doors and windows until a fine layer of dust lay everywhere.

A. E. Palmer and other staff members of the experimental farm at Lethbridge went around preaching the gospel of soil conservation. “It’s the beginning that counts”, they said. When soil drifting starts it creeps, but with gathered strength the black clouds drive with force across the land." So methods were devised of holding or slowing up the soil before it could do harm. Straw was spread on the hilltops, since these were the areas most subject to erosion, and strip farming came into general use. This strip farming was a modification of the practice of summerfallow that had been a tradition on the western prairies. The purpose of the summerfallow was to conserve moisture and control weeds, but a well-worked, bare field was open to the full force of the howling wind. Recalling those times later, Mr. Palmer wrote:

> It is a memory burned into my brain by months and years of hot winds; by driving through miles of drifting soil so dense in the air that the radiator cap was hardly visible; by seeing miles and miles of good farm land drifting like snow into piles so high that you could not tell where one farm ended and the next one began, the fences being covered; by watching farmers and their families dig their machinery out of drift piles and load them with their household effects on their wagons or trucks and start with their families for the park belt of the north, leaving behind their half covered house and their years of toil and hope. As I think back on those experiences, I find my memory sharp indeed.

As far back as 1919, there had been those who had become alive to the soil drifting danger. How strip farming started was told in 1946 by Chris T. Withage, operator of the Canada Department of Agriculture Illustration Station at Nobleford. In a letter to R. M. Putnam, later deputy minister for the Alberta Department of Agriculture, Mr. Withage reported that this practice originated in the Monarch district, northwest of Lethbridge. He was one of the first farmers to employ strip cropping practices.

He relates how, in 1919, he was bringing home a cow from Granum. The whole countryside was drifting, and he noticed as he travelled eastward along the road that there was no blowing on summerfallow lying just to the east of fields that had been in crop. "If there were more west sides to our summerfallow fields", he told himself, "we wouldn't have this soil drifting". So he conceived the idea of running strips up and down the field across the direction of the prevailing wind, so that there would be more west sides to the fields.

The practice of strip cropping was so successful that it was adopted as general farming practice all over those sections of Alberta where soil drifting was a menace. The strips varied from 10 to 50 rods in width, the average being about 25 rods. They were at right angles to the prevailing wind and usually ran north and south.

With the soil drifting badly over wide areas, it was soon realized that there was something wrong with the type of cultivation practised. The old idea of deep plowing was not conducive to good farming on these open prairie lands. So implements were devised that, instead of burying the trash, left it on or near the surface to check the force of the wind.

Mr. Palmer tells of the plowless fallow methods used by some farmers of the south as early as 1915—how they fallowed with disc and duckfoot cultivator instead of the plow. Some burned the stubble before cultivating, and the soil drifted just as badly. Others, leaving the trash on the surface of the plowless fallow, found themselves overcoming the soil drifting problem.

Then came the urge for more efficient implements. In the spring of 1932, Professor J. Macgregor Smith in a radio talk over CKUA in Edmonton, spoke of the advantages of the one-way disc in the control of soil drifting, and in 1935, C. S. Noble of Nobleford introduced his first blade cultivator, which left the stubble on the surface and still further reduced the soil drifting hazard.

It was in that year too, that the Prairie Farm Rehabilitation Act was introduced in the Federal House of Commons. In an address delivered to the Eastern Ontario and Central Ontario Locals of the Canadian Society of Technicial Agriculturists in January, 1938, Dr. E. S. Archibald, Director of the Experimental Farms Service at Ottawa, spoke of the prairie situation since 1929. In the course of his address he remarked:

> Succeeding years of disastrous drought, grasshopper damage, soil drifting, and necessary large scale relief to farmers in central and southern Saskatchewan, southwestern Manitoba, and southern Alberta, covering a period of five years, inclusive of 1934, convinced the Dominion Government that drastic and

large scale rehabilitation measures were necessary if the enormous earning power of Western Canada due to a population of most capable farmers in their particular type of production was to be retained.

With the start of the Prairie Farm Rehabilitation Administration in 1935, a new attitude towards land conservation began.

Soil conservation, it was recognized, was the responsibility of all, and not alone of the man on the land. Assistance was offered with small scale irrigation systems; farmers received help in obtaining water supplies for stock and in the building of dugouts and stock watering dams. Regrassing projects were carried out, new plant variety possibilities explored, and new cultural methods were tested and applied. Purebred sires for community pastures were provided to help produce good quality cattle for the United Kingdom fresh meat trade.

"Unfortunately the wise counsel of many leaders was not followed during the period of settlement, nor in subsequent years, of what might be termed "normal precipitation", said Dr. Archibald in 1939. "Only the desperation caused by the recent nine consecutive years of extreme drought and ravages by insects has impelled the adoption of the best available advice, moulding it into a definite framework on which to build a sound land utilization plan for the future."

He pointed out, however, the difficulties that beset the early settlers. Those settlers faced frost, drought and high winds, and until experience and research showed the way by providing crop varieties better adapted to western conditions, and introducing cropping and cultural methods that would conserve the soil, disappointment and heartbreak were the common lot.

But by 1935, a backlog of useful information had become available. Soil drifting had occurred in Manitoba as early as 1890, but it was of little consequence compared with the large soil erosion areas that later developed in the west. Since that time a great deal of knowledge had been obtained on conditions and how to cope with them, so that when P.F.R.A. activity began, investigational work contributed largely by the Experimental Farms of the drought area provided a basis for action.

But more information was needed, and studies were intensified on drought conditions and means of combating them. Soil research, the effect of fertilizers, farm implement studies, tillage for weed control, plant breeding, irrigation and land utilization were among them.

Knowing that co-operative effort by research, extension and the farmers themselves was essential for progress in this matter, groups of farmers were organized into agricultural improvement associations. Their aims were to learn and apply new methods of agriculture with the hope that the prairie drought area could be made productive and habitable. The result of these studies and co-operation, with both irrigated and dryland farming, has been the suiting to the area of a type of agriculture best adapted.

And it was around this time that the whole concept of farm power was beginning to change. Steam tractors were early used for threshing and to some extent for breaking on the wide, open plains. The few internal combustion engines that followed were heavy and cumbersome, and maintenance was something of a problem, demanding more skill than was usually readily available.

It was in the early nineteen-twenties that the first modern tractors came on the market. Equipped to deliver power through drawbar, belt pulley and power take-off, and with their enclosed gears, automotive type steering and better protection from dust, they paved the way for more attractive and efficient operation.

Then in the thirties, came the rubber-tired tractors with their higher speed operation and lower operating costs. This higher speed meant machinery to suit. The old implements, designed for the pace of the team, were not sufficiently durable for the stress placed upon them by this new power change. The result was the opening of a whole new field, and a challenge to the ingenuity of that rapidly expanding group of professionals, the agricultural engineers.

So the one-way succeeded the plow and the combine followed the binder, while in the field of haying machinery many changes were to occur. Then too, motor trucks, grain loaders and grain cleaners all helped to reduce the farmer's chores and allow more efficient use of his limited, busy-season time.

But the story of farm mechanization in Alberta and the west has not been one of steady progression. During depression and unemployment there was little demand for farm mechanization; but the labour shortage of the war years, and the now growing need for products of the farm, have resulted in a steadily increasing demand for better and still better equipment.

Although, in the mid 1920's, the tractor was coming more and more into use for general farm work, it was as yet by no means accepted by the majority of farmers. "Farmers are finding it more economical to work their lands with horses than with tractors", said the Livestock Commissioner in 1924. "And", he continued, "while there is a place for the tractor on the large farm, it will only be used in conjunction with horses".

But the tractor was gaining favour and by 1928, since the work could be done much more quickly, more and more tractors were appearing on the farms. Economically, however, the horse remained in favour, and this showed strongly when in the 1930's the dark clouds of depression gathered. But shortly before this, the sale of tractors was heavy, and some firms were trading tractors for horses and shipping the horses east. Still, said the horse lover, there will remain a demand for good farm horses, since the tractor can't entirely replace the horse on Alberta farms.

And when in 1930, effects of the depression began to be felt, there seemed to be some truth in their assertion. With the low price of wheat and the high price of gasoline and oil, the horse for farm use was again in favour. "The farmers of late years have been relying on motor power", said the Livestock Commissioner in 1931, "and therefore have not been raising many colts. In the past year a great many were forced back into using horses, and this created considerable demand".

As late as 1938 we find the Alberta Department of Agriculture advising: "The demand is still growing, even though gradually, for draft horses for farm work. This is possibly due to the steady migration of settlers from the south-eastern section of the province (most recently known as the drouth area) to the northern part of the province, where in many cases, these settlers are now using horses in place of their previously used farm tractors and machinery, which have now become worn and depleted, and also to the fact that the smaller land holdings are more adapted to horse work."

It was not until the war years with their demand for increased production and their farm labour shortage that the tractor again became the prime motive power on the farm. More tractors, fewer binders and infinitely more grain combines was the story from that time on. The Canada census of 1931 noted 23,985 tractors in Alberta; in 1951 there were 79,282 and in 1961, 102,624. Comparisons of binders and combines show 73,487 binders in 1931 and 32,476 in 1961. Combines in 1931 numbered 2,523. By 1961 they had multiplied more than fifteen times to a total of 38,530. Motor trucks on farms had increased from 7,319 in 1931 to 39,723 in 1961, while auotmobiles had risen only slightly from 42,817 in 1931 to 46,314 in 1961.

Power machinery for field use does not of course tell the whole story of farm mechanization. Electricity on the farm and the labour saving devices of dairying, stock raising and in the home are a far cry from pioneer days, or from even the more advanced type of agriculture practised in Alberta twenty years ago.

NORTH COUNTRY

Wheat yield for Alberta in 1930 was 132,900,000 bushels, compared with 103,670,000 bushels in 1929. Due to the economic depression, however, farm value of the 1930 crop was considerably below that of 1929. But it was about this time that the high quality of seed grain from the northern part of the province was becoming recognized, and the demand from outside was increasing.

Helping to advertise the area and the quality of crops that could be grown there were men like Herman Trelle of Wembley, who in 1926 carried away both the wheat and oats championships at the International Hay and Grain Show in Chicago. For a number of years he was consistently among the high prize winners at this event. Nor was he alone. Others capturing coveted awards for the Peace River region during the 1920's and 1930's were P. O. Clubine, Wembley (Peas); Robert Cochrane, Grande Prairie (Timothy); S. B. Allsop, Grande Prairie (Winter wheat); Edward Harron, Huallen (Brome); F. Lloyd Rigby and Wm. Justyn Rigby, both of Wembley (Wheat and Oats), and Jack Allsop, Wembley (Wheat).

These were not, by any means, the only awards coming to Alberta farmers, but persistent championships and prizes year after year served to keep the Peace River region in the public eye. The Peace was, after all, still the new frontier and, a land of romance and adventure. Lands in central and southern Alberta were pretty well occupied, at least as far as good homestead land was concerned, and the trend of migration must now be to the north.

Here was a land in which wheat had been grown at least as far back as the 1870's, the wheat and barley championships at the Centennial Exposition in Philadelphia of 1876 having gone to the French Mission at Fort Chipewyan. Long before the turn of the century wheat was also being grown by the missionaries and traders at Dunvegan, Shaftsbury and Fort Vermilion. But all this was in the low-lying river valleys, and it was some time before it was generally believed that wheat might be grown on the plains above.

Reports from the Peace River region in 1905, however, showed farming there already progressing favourably. Fort Vermilion reported 300 head of horses and 500 head of cattle owned by 60 farmers and ranchers. Six or seven thousand bushels of wheat were grown that year and about 3,000 bushels of barley. A good vegetable crop was reported. There were four mills, one of which was a large roller mill, and the other three small grist mills. Settlement extended about 25 miles along the Peace River and was about four or five miles wide.

Peace River Crossing, about 15 miles long and a little more than two miles wide, had about 150 horses and the same number of cattle. The reported crop for 1905 was about 3,000 bushels of wheat and 1,500 bushels of oats. There were two small grist mills. Spirit River was about fifteen miles square and had from 250 to 275 head of cattle, and from 300 to 400 horses. The crop totalled about 1,000 bushels each of wheat and oats, and a good vegetable crop provided garden fare. Grande Prairie reported about 200 head of cattle and a large number of horses. An indication of the considered far-off nature of these settlements is suggested by the approximation of the reported figures in each case.

Two thousand people in 1911, 20,000 in 1921, and 60,000 in 1930 – that was how the Peace country grew. The early settlers went in by the Athabasca, Lesser Slave Lake and Peace River Trail, or followed the Grande Prairie Trail north from Edson. But the opening of the Edmonton, Dunvegan and British Columbia Railway to the south Peace River country in 1916 provided much more comfortable entrance to the area. North to Peace River or west to Grande Prairie the settlers went, attracted first to the easier clearing of the more open, park-like lands.

Before 1912, the population was scattered, but soon after that the influx started. Even during the war years settlement continued, and although immigration from overseas was cut off, settlers arrived from the United States and the older areas of Canada. In 1928, the two land agencies of Peace River and Grande Prairie accounted for 34.1 per cent of all homestead entries on Dominion lands in Western Canada.

With the turning over to the province of its natural resources on September 30, 1930, consideration of better land use became necessary. The homestead policy of the Dominion Government had proved valuable in populating the west, but it had been a matter of survival of the fittest and many had fallen by the wayside.

An early homesteader in the Peace River region had this to say: "As we developed it, the frontier has been a liability, with a scattered population difficult to serve administratively, commercially and professionally. Railroads have to be subsidized. Highways are poor and costly per capita. The good old pioneer days recalled by octogenarians were fine for those who came through all right, but like the war it was tough for the casualties."

That homesteader was W. D. Albright, later Superintendent of the Beaverlodge Experimental Farm. He was speaking in June, 1942, to the Canadian Society of Technical Agriculturists gathered for their annual convention at Olds. "The land-seeker pays in privation and hardship for the privilege of virgin opportunity", he said. "Scattered, irregular entry and the throwing open of poor and ill-situated lands have been three main contributing causes, being especially disadvantageous in the bush".

Mr. Albright was an early settler in the Peace River region. He arrived at his homestead near Beaverlodge in 1913, after travelling with his family by team and democrat by way of the old Grouard Trail. He was a graduate of the Ontario Agricultural College and enthusiastic about farming prospects in the Peace. Interested in finding the best varieties for his area, he sowed in 1914, plots of grain supplied by the director of Experimental Farms at Ottawa.

In 1917, the Albright farm was created an experimental substation, and in 1919 Mr. Albright became superintendent. His experimental work, his writings, and his missionary zeal in the cause of agriculture, throughout the Peace River region and beyond, are remembered in the form of a cairn unveiled by his successor, Superintendent E. C. Stacey, at the Beaverlodge Experimental Station in 1954. In his later years, Mr. Albright once wrote to this effect: "When I was young I believed that the proper study of mankind was agriculture; but more and more as time goes on, I am inclined to agree with Pope that 'the proper study of mankind is man'".

Before Alberta became a province in 1905, settlers had been attracted by the allurement of free homesteads, and this policy had long continued. Homesteading had served a purpose in bringing thousands of people to the land to open up the country and produce for their own and the country's benefit. But now ideas were changing and thought was being given to an agricultural land policy through which haphazard settlement of the past would be avoided, and render unnecessary abandonment and relocation of settlers which had been a source of grievous loss to the families concerned and a resulting expense to the taxpayer.

With this end in mind, Dr. F. A. Wyatt, Professor of Soils at the University of Alberta, suggested in 1939 that soil surveys should precede future settlement and sub-marginal lands be permanently withheld. Quality of land, accessibility, cost of clearing, etc., should be used to direct and control the order of land settlement. He believed that the homestead law had served its purpose with the end of settlement of the grassland prairies, and if the homestead law were abandoned it would pave the way for regulating future use of lands.

It might be necessary, he said, to consider some financial assistance to help a settler become established, but in any event great care should be used in selection of settlers so that the settler might have a fair chance of success. It was the wooded lands that he had in mind, since these were the areas in which future settlement would occur. District Agricultural Agents should be available to assist the farmer in developing and properly using these wooded soils, he believed.

It was in March of that year, that homestead entries were discontinued by the province and replaced by an agricultural lease policy. Before this, the main objective had been to get the land settled and encourage immigration, and applicants were allowed to file on unpatented land that was open for settlement regardless of location, type of soil, railways, roads and schools. Between 1870 and 1930, many homesteads were cancelled because the settler was unable to complete his duties. Between 1930 and 1939 while the province continued the homestead policy, there were 24,098 entries, but during this same period 26,611 cancellations were made.

It became obvious that some change was required, and replacement of the homestead policy with the system of agricultural leases resulted. Under this latter arrangement the land was inspected by the Department of Lands and Mines before settlement to make sure that the soil and topography were satisfactory and that at least 50 per cent of the area was suitable for cultivation. The inspector also reported on the amount and cost of clearing to be done, distances from schools, condition of roads and other factors that might have a bearing on success of settlement. Leases were granted for twenty years and renewable for a further twenty years, with an option to purchase after the first ten years of the lease, providing terms of the lease had been complied with. As well as agricultural leases, cultivation and grazing leases were available under which land might be operated in addition to other land held by the lessee.

The agricultural lease type of settlement proved fairly satisfactory, but was followed by a homestead sales policy under which from the beginning the settler might look forward to acquiring the land as his own. The advantage of this over the early homestead policy was that the land was thoroughly inspected and approved for settlement before the applicant was allowed to take possession.

Land was opened by areas and only the good land in those areas was made available for settlement. Scattered and indiscriminate settlement was thus avoided. The price of the land was set according to a carefully graduated scale, and on a half or three-quarter section homestead twenty acres a year had to be broken to a total of eighty acres. At the end of five years, title, providing certain other requirements had been met, could be applied for and the balance of the purchase price paid.

The land remaining by this time was chiefly in the wooded areas of the province, but as late as the early 1960's there was a rush for land in such areas as that of the Peace River region. It was still by no means an easy way to acquire land and much hard labour was entailed, but with land each year becoming scarcer the rush of applicants suggested that to many the hope of gain seemed well worth the effort.

Settlement has spread far since the days of the Red River settlement in Manitoba, and each successive wave of immigrants profited to some extent by the mistakes of those that had gone before. But it was not until science devised improved methods of land breaking and clearing, new and better crop varieties, knowledge of treatment of soils that were once considered inferior, that settlement of Alberta's north country became less of a gamble. To the federal experimental farms and research stations throughout the province, and particularly to the studies of the farther north research centres of Beaverlodge and Fort Vermilion, goes a great deal of credit for increasing knowledge of the natural laws of the north and the ability of the farmer to co-operate with them to his advantage.

Throughout the whole history of this far west province, homesteading has not been easy. But the west was not developed by weaklings, and in spite of hardships, the majority won through. Compared with the easy living of today the pioneer can be considered to have suffered privation. There is no doubt that many did. But the country was young and the people were young. Enough to eat, a warm shelter and good neighbours, together with a profound faith in the future — all helped to make life well worth living. How they managed is forcefully told by Major H. G. L. Strange in his Searle Grain Company publication "A Short History of Prairie Agriculture". He says:

> During those early days settlers without money helped to break the land and erect the buildings of those who were better off and thus earned money with which to survive. Many homesteaders earned money by joining Dominion survey parties, which were still engaged in surveying the country, or railway construction camps and gangs in building branch lines and bridges; or by freighting supplies from points along the railways to Northwest Mounted Police depots at distant points, or by working for Dominion Government Departments, Land Offices and for retail stores in the new villages and towns.
>
> Some went to far-off mining camps, even as far as the Klondike, to work in the mines, returning each year in time to put in their quota of work on their homesteads. They cut firewood and sold it to nearby villages and towns. They cut railroad ties and sold them to the railroads. Some settlers bought old farm implements and repaired them for resale. Others bought oxen and horses, fed them up and sold them at a profit. The grown-up daughters of some settlers' families found work as 'hired help' with city families in Winnipeg, Regina and other growing cities. All this helped to provide cash for the homesteaders.

And to the credit of those early settlers, they did more than just hope for a better life; their activity and co-operation went far towards making their dreams come true.

FARM ORGANIZATION

Soon after the turn of the century the farmers of Alberta began looking to the possibilities of united effort to improve prices of things they had to sell and reduce the cost of the things they had to buy. Only with a united voice could they hope to approach effectively the governments of the day, federal or provincial. Settlers from the United States had early brought with them ideas of the American-born Society of Equity, while along similar lines had been started the Alberta Farmers' Association.

In 1909 these two farm organizations combined under the name of the United Farmers of Alberta, and for twenty-six years held sway as a powerful force for improved farm and home conditions.

Shortly after the first world war, with falling prices for farm commodities, increasing tariffs and cost of the things the farmers had to buy, the United Farmers of Alberta decided that the time was ripe for them to enter politics themselves.

Henry Wise Wood, their able and respected leader, was doubtful of the political approach, but the force was too strong. Following success of farmer candidates in federal by-elections at Cochrane and Medicine Hat, the membership at large were determined that farmer representation in Parliament and in the Provincial Legislature was the only remedy. The provincial election in Alberta in June of 1921 provided the opportunity for a show of strength. The result was a sweep for the United Farmers of Alberta candidates and their labour supporters. It was the beginning of a new outlook for the farmers of Alberta.

For fourteen years the U.F.A. government held sway and in spite of difficult times made a capable showing. Re-elected in 1926 and again in 1930, good, sound government was for the most part provided. Notable during this regime were return to the province of its natural resources, profitable sale of the provincial railways that had proved a burden to the taxpayer, encouragement of co-operatives, and organization of the Alberta Wheat Pool.

Then fell the depression of the nineteen-thirties, and with things going from bad to worse the demand again was for action.

The Co-operative Commonwealth Federation was the later goal of the U.F.A., but it made little headway in Alberta against the Social Credit theories of Major Douglas and William Aberhart.

After some consideration, the U.F.A. government refused to accept social credit as a remedy, believing it was beyond the power of a province to make it effective. However, Social Credit as a political possibility was gaining more and more supporters. Entering the provincial field in the 1935 election, the Social Credit party swept out of office the former U.F.A. incumbents and won the election with an overwhelming majority.

More militant than the United Farmers of Alberta was the Alberta Farmers Union. Following the defeat of the farmer government in 1935, membership in the U.F.A. fell off considerably. Negotiation for betterment of the farmers' lot was their mode of attack. But a more radical element arose who believed that withholding their produce from the market was the only way to obtain satisfaction of their demands.

The Alberta Farmers Union started first in the fall of 1938 as the United Farmers of Canada, Alberta Section. An organization with a similar name had been in existence for a number of years in Saskatchewan, and it was hoped that eventually a Canada-wide farmers union might result.

The United Farmers of Canada, Alberta Section, intended as a section of this proposed national body, came into being at a mass meeting in the Willingdon district to protest the drop in wheat prices. Proposed by the King government was a reduction to 80 cents of the initial payment of 87½ cents inaugurated by the Bennett government. It was decided that the organization should be non-political; open to bona fide farmers only; economic in scope; and advocating union principles. The first of these appeared in the charter of the organization as a safeguard against any change of thought against the objective of economic union with economic ends in view.

As early as 1939 a resolution was passed by the U.F.C. convention instructing the directors to approach the U.F.A. with a view to amalgamation. It was not until 1949, however, that differences were finally ironed out and the two organizations united under the name of the Farmers Union of Alberta.

Among other causes of difference was change of name. The United Farmers of Canada (Alberta Section) expressed themselves as prepared to change the name of their organization if the U.F.A. would do the same. They were not prepared to amalgamate under the old name of the United Farmers of Alberta. They believed that the name U.F.A. was associated in the minds of many with political activity, something which the new organization had foresworn. Nor with its traditions and associations were members of the U.F.A. prepared to change the name of that organization which had prevailed so long and seemed to its members to have become a part of the province itself.

In July, 1941, the Board of the United Farmers of Canada (Alberta Section) met with the full executive of the U.F.A. following the Alberta Federation of Agriculture convention at Olds. The U.F.C. understood from that meeting that both the U.F.C. and the U.F.A. were willing to submerge their names and choose a new one. Several names were suggested and that proving most popular was the Alberta Farmers Union.

At their separate conventions, the U.F.C. by a unanimous vote decided to carry out the wishes of the joint convention, but the U.F.A. refused to do so and invited the U.F.C. to join them under the name of the U.F.A. The U.F.C. were unable to agree to this, and instead applied for a charter under the name of the Alberta Farmers Union.

Direct action was another subject on which the two organizations differed. Both agreed on principle but the U.F.A. made the reservation that such action should first be approved by a two-thirds majority of the membership.

Thus, when strike action was decided by the Alberta Farmers Union in 1946 in an endeavour to call attention to the farmers plight, the U.F.A. as well as the Alberta and Canada Federations of Agriculture refused to support this action. It is reported, however, that although the directorate of the U.F.A. officially opposed the strike, many of its members were in full sympathy with the strikers.

Whether or not the strike was justified was a matter of opinion. Carl Stimpfle, President of the Alberta Farmers Union remarked: “I am fully convinced that the Government has recognized the fact that the farmers did mean business and that action taken by the U.F.C. and ourselves was correct and proper".

Others pointed to losses that had occurred as a result of the strike – losses to the farmers co-operatives with the Northern Alberta Dairy Pool as an example, and losses to the farmers themselves, particularly producers of poultry and dairy products. They referred also to the advice to the strikers' delegates by the Hon. J. G. Gardiner, Minister of Agriculture, who told them that the Agricultural Prices and Support Board, of which J. G. Taggart was Chairman, could do everything that their requested fact-finding board could do.

In reviewing the strike, the Western Business and Industry Magazine of October, 1946, remarked: "Alberta farmers are a strange and unpredictable lot, as any student of Western Canadian history knows. Their like cannot be found anywhere else in Canada. If they get an idea into their heads there's very little except time that can get it out". Not altogether a bad trait perhaps! If it hadn't been for that "dogged-does-it" attitude, Alberta might have been a far different province from what it is today.

Efforts to unite the U.F.A. and the A.F.U. continued. Relations between the two organizations were cordial and at conventions of both, this matter of amalgamation was kept alive.

In January, 1949, at a joint convention in Edmonton, agreement was reached. Both organizations accepted change of name to the Farmers Union of Alberta, and it was agreed that the co-operatives initiated and sponsored by the U.F.A. should continue to function as a separate body under the name of the United Farmers of Alberta Co-operative Limited.

In the fall of 1949, the first convention of the Alberta Farmers Union took place in Edmonton with Carl Stimpfle its first President. Farm organization in Alberta was again on its way after years of separation. Differences were soon forgotten and at the annual and district conventions farmers were again joined together in their efforts for improved farm and home conditions.

Since that time, understanding between the F.U.A. and the federal and provincial governments has improved steadily. Suggestions from the Union receive careful consideration and from time to time their advice has been sought on matters of farm policy. While demands of the Farmers Union are not always granted, there is a good working relationship through which residents of rural Alberta have benefitted.

In 1929, the Co-operative Council of Alberta was formed with H. E. G. H. Scholefield as President and D. M. Malin and Norman F. Priestley as co-secretaries. It was initiated by the United Farmers of Alberta and was representative of the various province-wide co-operative organizations and interests.

The objects and purposes of the Council were to promote the dissemination of sound co-operative principles; to co-ordinate the educational efforts of all co-operative groups, with a view to eliminating duplication and of promoting efficiency; and to carry on enquiry and research in any field of activity which may lead to the attainment of social justice and equity through the application of the principles of co-operation.

At a meeting of representatives of co-operative organizations in 1936 the Alberta Co-operative Council became affiliated with the Canadian Chamber of Agriculture, the national organization which later became known as the Canadian Federation of Agriculture. In 1940 the Alberta Federation of Agriculture was born.

The Alberta Federation of Agriculture is an affiliation of Alberta farmer organizations which include farm co-ops and other farmer associations and groups. They include the Wheat Pool, U.G.G., dairy pools, poultry producers, the Farmers Union of Alberta, livestock co-ops and sheep and wool marketing organizations. They include also cheese factories, farm bulk supply stations, breeder associations, feeder groups, sugar beet growers, seed growers and beekeepers.

After each annual meeting, members of the board meet with governments and other officials to present policies discussed and endorsed during the meeting. The Federation has worked with the purpose of assisting those in authority to implement policies in the best interest of farmers.

Some of the things that the A.F.A. has supported and worked for over the years are the Canadian Wheat Board, International wheat agreements at fair prices, freedom from import duties on farm equipment, and freedom from export duties and quotas on products of the farm. They have maintained strong support of the Crowsnest Pass Agreement, and initiated special provincial, interprovincial and Dominion conferences to discuss legislation on marketing, coarse grains, poultry and poultry products. The Federation supported the principle of the Federal Freight Assistance Policy to overcome distance in marketing feed grains, and took a vigorous and a leading role in securing marketing legislation applicable to major agricultural products in Alberta.

In essence, the Alberta Federation of Agriculture has served as a co-ordinating body for Alberta farm policies, and as a medium of exchange for such policies between provincial, national and international levels. It has worked in close relationship with the U.F.A., the A.F.U., and the present Farmers Union of Alberta. The Farmers Union of Alberta remains a member of the Federation, with three directors on the board. Until amalgamation, both the U.F.A. and the A.F.U. were included in the affiliation.

TOO MUCH WHEAT

In 1933, only 94.5 million bushels of wheat were harvested throughout the whole of Alberta. Drought in midsummer resulted in crop failure over large areas of the south and a feed shortage resulted. Frost and grasshoppers also took their toll. Then came 1934 and the story was little better. There were large yields of grain in the north, but again drought struck in the south. Grasshoppers menaced 4.5 million acres and baiting was extensive. In the Peace River region rain and snow added to the farmers' woes. Threshing was delayed, there was much tough and damp grain and grades were reduced as a result. The provincial wheat harvest that year was 112.5 million bushels.

The years 1935 and 1936 were again disappointing. Drought was severe and grasshoppers prevalent. To add to the discomfort, frost came on August 15, 1935, and destroyed to a greater or lesser degree 75 per cent of the crop acreage. Hail too, added its share and many districts suffered damage.

But in spite of less than average crops in Alberta during the 1930's, the bogey of overproduction was raising its head. "Overproduction or Underconsumption?" was a popular question raised in debate at that time. Production and export of wheat had expanded rapidly up to 1914 and the first world war lent further impetus to production. In 1917 and 1918 the Board of Grain Supervisors had controlled wheat marketing and in 1919 the Canadian Wheat Board took over. When in 1920 the Wheat Board was abolished, prices declined and farmers demanded its return. With government action not forthcoming, the farmers of Alberta turned to co-operative marketing of their wheat and in 1923 the Alberta Wheat Pool, the first of its kind in Canada, was organized.

Between 1929 and 1932 wheat prices fell drastically. Competition and underselling by Argentina reduced the overseas demand for Canadian wheat and surpluses piled up. From 1931 until the Canadian Wheat Board again assumed control in 1935, the Dominion Government attempted to stabilize prices by buying up wheat offered for sale at Winnipeg and choosing its own time to sell. From that time on, stocks of wheat continued to rise until on August 1, 1934, they stood in Canada at almost 210 million bushels. From there, a gradual falling off in the surplus occurred, until 1939 brought one of the most bountiful harvests in the history of the west.

Then in September came the second world war with its changes and demands. As soon as war was declared steps were taken to organize agriculture to meet war requirements. On September 9, 1939, the Agricultural Supplies Committee was appointed by the Governor General in Council. Its six members were all senior officials of the Dominion Department of Agriculture. Wheat, bacon and cheese were the staples chiefly required and efforts were begun to supply these in quantity. Wheat, which had been in oversupply and almost a drug on the market was now considered a most desirable asset.

Following the 1939 harvest the huge stocks of wheat for export or carryover amounted to 460 million bushels. Wheat in Alberta averaged almost 18 bushels to the acre, with production in the neighbourhood of 150,000,000 bushels. The Field Crops Commissioner, O. S. Longman, reported terminal and country elevators taxed beyond their capacity to handle the crop.

By November 1939, outward movement of wheat was brisk, and market prices were rising because of the focussed demand on Canada from European and other countries. The anticipated demand for wheat, however, did not develop. Wheat supplies continued to exceed demand and in 1941 the Dominion Government introduced its wheat acreage reduction policy, under which payment was made for summerfallow and substitute crops. As a result, the wheat acreage in Alberta was reduced from 8,667,000 acres in 1940 to 6,653,000 acres in 1941. In 1942, Field Crops Commissioner A. M. Wilson reported:

> Huge reserves of wheat in elevators and on farms remain a major agricultural problem. The efforts of this Branch to reduce the acreage planted to wheat, however, has been confined to the promotion of substitute crops, the chief of which are barley, oats, forage crops, flax and special seed crops including soy beans and peas. Most of these crops, it will be noted, are of special wartime significance.
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> The Canadian Wheat Board has regulated the deliveries of

wheat and coarse grains to elevators by permits and delivery quotas. Farmers have been forced to devise ingenious methods of providing farm storage because of lumber shortages.

In 1945, the year of the war's end, decreased yields of major crops were harvested in Alberta. Not since 1937 were grain yields so sharply reduced because of dry weather during the growing season. Only 83,000,000 bushels of spring wheat were harvested throughout the whole of the province, compared with 105,700,000 bushels in 1944.

"Grain which had accumulated since 1942 moved rapidly and in enormous quantities from elevator storage and farmers granaries early in the year", Mr. Wilson reported. "By mid-June", he continued, "elevator and farm supplies were dangerously low. In view of the crop outlook stock men were frantic for feed and liquidated much of their livestock when unable to have assurance of obtaining adequate grain. The Feeds Administrator applied regulations to prevent further movement of grains eastward during the latter part of September.

"This order remained in effect until the end of November. This action was taken to protect the livestock industry of the Province. In addition, the Feeds Administration has stored in Government terminal elevators at Edmonton and Calgary reserve supplies of oats and barley to meet emergency feed requirements that may arise from Alberta or British Columbia points."

But throughout the war, it was livestock and livestock products that were in demand. With the high requirements for bacon, special attention was devoted to the swine industry. In 1939, Alberta was the second largest hog producer in the Dominion, and very close to Ontario in quality of the product. During that year, Alberta marketed 979,898 hogs of which over 32 per cent graded 'select'. This was considered a great step forward, but it was surpassed in 1940 when a total of 1,484,352 was reached.

Higher prices for livestock in 1941 stimulated a strong demand for purebred cattle. Swine production was increasing rapidly and this trend continued. The change from a grain to a better balanced grain-livestock economy was evident with livestock now accounting for the greater part of the farm income. Estimated cash income from sale of field crops in 1942 in Alberta was $58,389,000; from sale of livestock it was $111,105,000. Alberta passed Ontario that year as the largest swine producing province in the Dominion.

Use of cover crop for grazing cattle in the south was becoming attractive. Not only did it provide feed at reasonable cost but it was of value in soil conservation, a need of which more and more farmers were becoming conscious. Around 12,000 cattle were placed on cover crop in 1942 in the area extending from Claresholm to High River. The amount of beef consumed by the armed forces and civilians kept beef prices at the ceiling.

Livestock sales reached a record in 1944. Hogs sold numbered 2,981,940 and brought a total of $78,723,200, compared with 2,392,384 in 1943 with total returns of $60,766,553. There was a brisk demand too for dairy cows, and shipments to Mexico and British Columbia maintained prices at high levels.

The end of the war in 1945 brought a feeling of relief to all. There was no appreciable decline in demand for agricultural products. Overseas need was still tremendous and rationing in Britain continued for some years after the fighting stopped. George Church, President of the United Farmers of Alberta, who visited Britain in the early summer of 1947, urged all who were able to assist the British people to do so. On his return Mr. Church said, "Seeing for myself the desperate plight of the people of Britain I would urgently appeal to all prairie farmers to get all their surplus grain and other farm produce to market immediately, and over and above that to send as many individual parcels to Britain as they can". Norman W. Douglas Manager of the Hudson Bay Company in Calgary, who was over there at the same time, suggested that anyone having relatives or friends in England should send food parcels till it hurt.

Ahead was the period of readjustment. Agriculture in Alberta, as in the whole of Canada, had been geared for war; what the future would bring could only be surmised. Deputy Minister O. S. Longman, in the Alberta Department of Agriculture Annual Report for 1945 wrote:

> An emergency, war-engendered period of higher than normal livestock production appeared to be drawing to an end in 1945. Although marketings of cattle reached a new high, swine, dairy and poultry production declined, and there was a noticeable

unrest which seemed to be awaiting the signal for a return to grain production. The action of the Dominion Government in setting the price of wheat for the 1945-46 crop years at $1.25 per bushel basis No. 1 Fort William, and of establishing $1.00 as the floor price for a five-year period, lent support to the trend to grain production. At the same time, the equalization payments of 20c and 10c per bushel on barley and oats respectively, tended to discourage livestock production. The world's situation and the acute demand for food of any kind for the people of Europe further emphasized the desirability of producing grain as the most immediate remedy for the world shortage of food. Since Alberta is largely a province of mixed farming and because it is realized that a permanent agriculture cannot be sustained on grain production only, the trend toward this end created concern in many quarters.

That was the year too, 1945, that an Alberta Holstein Friesen cow, Alcartra Gerben, owned by Hays Limited of Calgary, brought fame to her owners and to the province with her World's record butterfat production.

In a 365-day record completed March 24, 1945, Alcartra Gerben produced 1,409 pounds of butterfat from 27,745 pounds of milk testing 5.08 per cent. This had never been equalled by any cow of any age or breed. It would have required the butterfat production of over eight average Alberta cows of that time to equal this record of Alcartra Gerben.

The average production per cow, based on total milk produced and the number of cows kept for milking, was 4,589 pounds of milk and 165 pounds of butterfat, assuming an average test of 3.6 per cent. In 1964, average milk production per cow in Alberta was 6,275 pounds, but the average of 17,000 cows under the provincial cow testing plan was 11,008 pounds of milk and 381.8 pounds of butterfat — an encouraging step forward from the 1945 average, but by no means approaching Alcartra Gerben's record.

Dairying is one of the oldest of Alberta's farming activities, and here as elsewhere, as soon as cattle are introduced some milking is done, if only to supply the needs of the household. We can be sure that with the coming of the North West Mounted Police to Fort Macleod in 1874, milk and butter were among their requirements.

But it wasn't until the coming of the settlers in the two last decades of the nineteenth century that dairying as such had its beginnings. The 1885 census of the North West Territories reported 3,334 dairy cows in the Provisional District of Alberta with production of 85,795 pounds of butter and 1,075 pounds of cheese.

The early settlers had little difficulty in selling their butter locally, but towards the end of the 1880's, with the establishment of some fair-sized dairy herds, more butter was produced than the home market could absorb. Surplus production and a slump in prices started the idea of dairy factories and wider markets.

The first dairy factory in Alberta was Ebenezer Healy's cheese factory, set up on his farm at Springbank in 1888. In the early nineties, D. M. Ratcliffe established Alberta's first butter factory at Big Hill Spring, north of Cochrane. Expansion of the industry was rapid and butter and cheese factories were started in many parts of the Territories. But operating and marketing difficulties caused trouble, and in 1896 the Dominion Parliament provided an amount of $15,000 "to promote the establishment and maintenance of creameries in the North-West Territories". A general reorganization of the creamery business resulted and in 1897 a number of creameries came under government management.

Professor James W. Robertson was appointed Dairy Commissioner for the Dominion of Canada in 1890, and on his resignation he was succeeded by J. A. Ruddick. But the man in closest contact with Alberta's dairy business from government control of the creameries in 1897 until his retirement as Alberta's Dairy Commissioner in 1934, was Superintendent C. P. Marker.

Letters on file in the provincial archives show him in 1904 busy preparing and shipping butter from Alberta to the North West Mounted Police at Whitehorse, Dawson, Medicine Hat and Maple Creek; and to civilian buyers at, among other places, Lethbridge, Medicine Hat, and Banff; Vancouver, Victoria, and Rossland, B.C.; Yokohama, Japan; and Shanghai, China. On June 7, 1904, a letter addressed to Mr. W. A. Wilson, Regina, Assiniboia, advises:

> Dear Wilson:
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> Butter, Butter, Butter! That's the cry on all sides from our genial customers and we can not fill the demand. Can you help us out by rushing shipment of all you have to spare and as much of it as possible in bricks?

Then, on July 12, 1904, he is writing to Mr. Ruddick, Chief of the Dairy Division, on "Egg Business":

> The local market where we expect to sell all the season's eggs will not pay any more for select large eggs than for a mixed lot, as to size, quality being equal in each case. Hence we don't make any special assortment as to size, which involves a good deal of time and labour that can be used to better advantage in the butter tinning department.

On July 1, of the same year, he is advising Superintendent Deane, Commanding "A" Division, N.W.M.P. at Maple Creek, Assiniboia, "We shall be glad to supply you with fresh butter during the ensuing fiscal year at a price of 25c per pound F.O.B. Calgary."

On March 1, 1906, Mr. Marker was appointed Dairy Commissioner for the new Province of Alberta, and when he took office on May 1, the Alberta Dairy Branch was born. The Province then took over control of the government creameries and marketing of butter. Five years later the dairy associations assumed operation of these creameries, but the Department continued to market the butter and extended this service to all creameries in the province. This continued until 1927. By that time markets had been well developed and there was not the same need for this service.

As with other branches of agriculture, improvement of quality and increased efficiency of production have been the goals. In 1910, delegates from government operated creameries, meeting in convention in Red Deer, accepted the Department recommendation for payment of cream and butter on the basis of quality. Improvement was quickly noted. An increase of 12 per cent in first grade butter over the previous season was shown from these cream grading creameries.

Then the wholesale produce merchants of Calgary, Edmonton and Vancouver agreed to buy butter on the basis of government grading. Soon, changes in workmanship by the principal creamery operators resulted in a product preferred by discriminating buyers in the British Columbia market, and later, creamery operators had their plants equipped for effective pasteurization of cream for buttermaking.

Through the years, improvement in both quality and quantity of product has occurred until in 1965 the average milk production per cow exceeded 6,000 pounds and total milk production for the year stood at 1.641 billion pounds. Farm value of dairy products for that year reached 51.27 million dollars.

EXTENSION, EDUCATION AND RESEARCH

For many years the various branches of the Alberta Department of Agriculture carried on their own extension activities with assistance from the demonstration farms and district agents. The first district agents were instructors during the winter months at the Schools of Agriculture, but those later were attached to the Livestock Branch.

Although a certain amount of necessary extension work is still carried on by each branch, by far the greater amount of this service is now the responsibility of the Extension Branch of the Department. Started in 1938 with R. M. Putnam as its first Director, the purpose of the newly formed service was to distribute information to farmers and homemakers with improvement of rural life as its long time objective. Publications were distributed, field days organized and short courses recognized as a phase of the district agriculturist's winter program.

It was not until 1942 that district agriculturists became the responsibility of the Extension Service. Formerly under direction of the Livestock Commissioner, they had, in the mid nineteen-twenties, become the direct responsibility of the Deputy Minister.

In 1939, radio was becoming recognized as an important extension medium and during the fall and winter months the Department co-operated with the University of Alberta Faculty of Agriculture in talks over the University station CKUA. The need was suggested also for the whole farm approach to farming problems instead of isolated emphasis on phases of livestock or crop production, important as these might be.

In that year too, the Women's Bureau, formerly associated with the Schools of Agriculture and supervised by the Vermilion School of Agriculture principal, W. J. Elliott, now became part of the Extension Branch. Also in 1939, the weekly press release "Agricultural Notes" came into being. With the title changed later to "Farm Notes" it continues as a weekly publication under the capable editorship of Miss Diana Rodney.

Then came the war, and speeding up of the war effort brought added responsibilities to the Extension Branch. Specific quotas for agricultural products were announced and farmers speeded up their efforts to meet Canada's commitments. This meant more requests for information, especially about swine, dairy and poultry products. Two problems were now recognized. One was to provide suitable information for those who asked for it. The other was to get more people to use new ideas. Said the Director's report for 1941: "There are some farmers who make no use whatsoever of technical information and the services offered by the Department of Agriculture. There is need of more assistance, especially in the preparation and planning of methods, to carry practical and useful knowledge to the rural people to enable them to improve their farming practices and raise their living standards".

In 1942, direction of district agriculturists was made a responsibility of the Extension Branch. During the years 1916 to 1918, the agricultural representatives were employed on a seasonal basis only. In 1921 the deputy minister mentions merely that "four district agents have been operating throughout the season". In 1923 we find the service established on a permanent basis with M. L. Freng at Lethbridge, W. H. Scott at Sedgewick, and James Murray at Medicine Hat. In January, 1924, district agriculturist offices were opened at Grande Prairie and Vegreville with A. R. Judson in charge at Grande Prairie and F. H.. Newcombe at Vegreville.

No less important has been the work of the Women's Extension Service under the long-time supervision of Mrs. Vera Macdonald.

The influence of a mother, unassuming as it might be, is often far-reaching. Once, long ago, R. M. Putnam related how his mother had said to him: "If you are ever in a position to do anything for the women on the farm, Robert, I hope you'll do it".

In 1943, as Director of Extension, he was writing: "The demand for women's extension work continues to increase more rapidly than staff and funds can meet. The time has come for the Department to consider the establishment of a comprehensive Women's Extension Program by the appointment of a field staff on a permanent basis in the form of District Home Economists to serve the women of the Province".

In that year, four temporary district home economists and one full-time district home economist were assigned to carry out the summer program of demonstrations. In 1944, four more were appointed on a permanent basis, making five in all. From that time, the work has expanded until now 24 home economists, located in Department of Agriculture offices throughout the province, find their time fully occupied with matters of particular interest to the rural homemakers of Alberta.

In 1946, F. H. Newcombe became Supervisor of District Agriculturists. On the appointment of Mr. Putnam as Assistant Deputy Minister in 1949, Mr. Newcombe took his place as Director of Extension where he remained until retirement on superannuation in 1959. Mr. Newcombe was succeeded on that date by the present Director S. S. Graham, under whose direction are now fifty district agriculturist offices and a greatly expanded Extension Service. This service now includes, as well as the 24 home economists mentioned, 64 district agriculturists, and specialists in livestock, plant industry, farm economics and veterinary services.

In 1966, the Extension Branch and the Agricultural and Vocational Colleges were combined to form the Extension and Colleges Division of the Alberta Department of Agriculture.

But what was the use of an extension service if its staff didn't have something to extend? They could, of course, look after and help to administer policies of the Department in their respective areas; and for a while it seemed almost as though they might be spending more time policing than educating.

But their purpose was to help and advise; to keep the farmer acquainted with up-to-date and more profitable methods; to act as consultants in the ever growing knowledge that farming was a business and no longer purely a way of life. Not that it had ever been in Alberta the way of life that it was in the early days of the eastern provinces. These eastern provinces started on a self-sufficient basis; farming on the prairies was a commercial proposition from the beginning.

Sections of Canada that were first settled had abundant rainfall and favourable climate and soil. Diversified agriculture was possible and what the farmer produced was used chiefly by his family. Alberta and the west were settled at a time when the eastern farmer was looking more and more to sale of his products off the farm. Nor did the west lend itself so well to production of variety. Wheat was the lure and a crop that could be grown with least effort. Self-sufficient agriculture differs from the commercial type in that it depends on production of a variety of goods, while commercial agriculture depends on the return of profits.

Helping the extension worker to keep the Alberta farmer advised were the research men of the experimental centers of the Dominion government at Lethbridge, Lacombe and Beaverlodge. The Lethbridge Experimental Farm, the first of its kind in Alberta, was started in 1906. Settlers were coming in rapidly, and not only irrigation farming but dryland grain growing was expanding. With his knowledge and experience of irrigated farm practice in the north-western United States, Dr. W. H. Fairfield proved an excellent choice for superintendent. He retired on superannuation in 1946, after seeing tremendous growth and many changes during his 40 years in charge of the farm.

In the early years of the Lethbridge Experimental Farm, topics of interest included use of irrigation water, methods of breaking land, kinds of crops that could be grown, suitable varieties and rotations, and rates and dates of seeding. Since this was an early ranching area, studies on cattle and sheep were not neglected. The relationship between range production of livestock and production of feed in the irrigated areas was early recognized and experiments were initiated on winter finishing of cattle and lambs. Later studies and expansion of irrigation were to result in a flourishing sugar beet industry. The value of the farm and its staff was again demonstrated when the drastic drought and soil drifting of the early 1930's began.

In 1907, the Lacombe Experimental Station was founded. This was in the parkland area on the rich black soils of the province. But staff responsibilities did not rest there. Their area under study extended from Calgary north to Lesser Slave Lake and from the Saskatchewan border to the Rocky Mountains — an area embodying all the major soil types of the province.

The first work of the experimental farm at Lacombe was of a demonstrational nature, but as more knowledge became available thoughts turned to development of a sound, balanced type of farming. Crop rotations were started, livestock feeding, breeding and management were undertaken, and studies were initiated in the improvement of cereal and forage crop varieties. The farm was later brought into prominence by the work on swine genetics of present Superintendent J. G. Stothart and Dr. Howard Fredeen that resulted in production of the Lacombe breed.

With extension workers so few in the early days, staffs of the experimental farms found their time divided between research and extension. But as the provincial extension service grew in strength, research and experiment became more and more the main function of the research centres, with their findings being carried to the farm by the extensionists. This is not to say that research is now entirely divorced from the farm. Visitors to the research centres are welcome, and farmers still look to the researchers to keep them advised. Working closely with the district agriculturists, the research men also retain farmer contact in their attendance at field days and meetings, so that a well co-ordinated balance of research, extension and on-the-farm practice is continued and maintained.

With research and extension go education, and credit for the beginnings of agricultural education in Alberta goes to her early Minister of Agriculture, the Honourable Duncan Marshall. Soon after his appointment in 1909, his thoughts turned to equipping farmers and farmers of the future with more knowledge of their chosen vocation. Nor did he forget the girls and women. He often alluded to their contribution to farm life, and early set up courses in household science in his schools of agriculture.

His first thoughts, however, were with the existing generation of farmers, and with this in mind he established in 1911 seven demonstration farms extending from Medicine Hat and Claresholm to as far north as Athabasca Landing. On these farms a variety of crops were to be tested as to their suitability for the area, cultural practices would be studied, well bred livestock introduced and their best care and management under Alberta farm conditions would be demonstrated.

No sooner were his farms well established than Duncan Marshall started the building of his agricultural schools. The year 1913 saw completion of three of these on the demonstration farms at Claresholm, Olds and Vermilion. Others were later erected, but hard times forced their closing. And throughout the years, some of them have persisted. Today, Olds and Vermilion, together with a later school at Fairview, continue the traditions of those first schools of agriculture under the newer name of Agricultural and Vocational Colleges. The studies have expanded in keeping with the wider range of agricultural activity today, but their foundation goes back to the inspiration of the Honourable Duncan Marshall and his first three schools of agriculture at Olds, Vermilion and Claresholm.

On this topic of education another name should be mentioned, that of Henry Marshall Tory. Dr. Tory was chairman of the Board of Agricultural Education set up by Duncan Marshall to guide the affairs of the schools of agriculture. But more than that, he was the first president of the University of Alberta and the man who turned 258 acres of riverside bushland into our present institute of higher learning. That founding of the University of Alberta at Edmonton is an epic in itself and is excellently told in E. A. Corbett's "Henry Marshall Tory". (The Ryerson Press, Toronto, 1954).

Dr. Tory had an abounding interest in the people of the province. Alberta's University was to be no ivory tower. While high standards would be required of both students and staff, the university had another need to satisfy — to get out among the people. "The people demand that knowledge shall not be the concern of scholars alone", said Dr. Tory in his first convocation address. "The uplifting of the whole people shall be its final goal".

So from the beginning, that first staff, consisting of the president and four others, was in constant demand for speaking engagements throughout the province. It was not only farmers they addressed, but boards of trade, clubs, and a variety of social organizations as well.

In 1912, Dr. Tory felt that the time had come for appointment of a full-time director of extension. He appointed A. E. Ottewell, a graduate of that first class at the University of Alberta, and the son of a pioneer family at Clover Bar. Out into the country the new director travelled, carrying films, slides and books, and lecturing in the towns and country schools along the way. From the beginning,

A. E. Ottewell became a well-known and welcome figure wherever he went.

In 1915, the Faculty of Agriculture at the University was initiated, with the first principal of the school of agriculture at Vermilion, E. A. Howes, as Dean. Under his administration, the first department of the faculty of agriculture was that of Animal Husbandry, in 1915. This was followed by the Departments of Field Husbandry (1917), Soils (1919), Agricultural Engineering (1920), Dairying (1921), and Entomology (1922). Special instructors gave lectures in poultry and veterinary science.

Two men from the Alberta Department of Agriculture were early associated with that first Animal Husbandry Department. They were Deputy Minister H. A. Craig, and Superintendent of Fairs and Institutes Alex. Galbraith. They carried on as special lecturers with a one-hour lecture, three-hour lab. course until the appointment in 1916 of Kenneth McGregor as first Professor of Animal Husbandry.

In the meantime, the former Deputy Minister, George Harcourt, who had been appointed in 1915 as special assistant to Dean Howes, was teaching field husbandry and horticulture. In 1917, Professor G. H. Cutler arrived to head the new Department, but Mr. Harcourt continued as Lecturer in horticulture until his retirement in 1935.

In 1921, Dean Howes approached E. H. Strickland, who was then in charge of the Dominion Entomological Laboratory at Lethbridge, with an offer of the position of Professor of Entomology. In 1922, with Professor Strickland as Head, the Department of Entomology was born.

As far back as 1913-14, before creation of a Faculty of Agriculture, lectures on soils were included in a Department of Biology course, and later by the Department of Chemistry under Dr. Lehmann. But it was not until the appointment of Dr. F. A. Wyatt in 1919, that the Department of Soils really began. Helping to solve the problems of soil erosion, and initiating, in the Macleod district, the first soil survey in the province were some of Dr. Wyatt's early accomplishments. In his later work on soil fertility, particularly with the wooded soils, he made an outstanding contribution to the cause of agricultural science and progress in Alberta.

Although the Department of Dairying was not created until 1921, short courses in Dairying were offered as early as 1917 to World War I veterans. The lecturer was Alberta's Dairy Commissioner, Dr. C. P. Marker. Space was provided in the South Lab. at the University, and during 1917-18, lectures in dairying were also given to the students registered in agriculture. In 1921, when the Department was created, Dr. Marker became Professor and Head. He continued in the dual role of Professor of Dairying at the University of Alberta and Dairy Commissioner for the Province of Alberta until his retirement in 1934.

Told in the University of Alberta Faculty of Agriculture Bulletin for 1965 (together with these other faculty facts I have related), is the story of the appointment of the first Head of the Department of Agricultural Engineering. It seems that on June 8, 1920, President Tory entered into conversation with a fellow passenger on the train from Saskatoon to Melville, Saskatchewan. The passenger was John Macgregor Smith, assistant professor of Agricultural Engineering at the University of Saskatchewan. After a brief conversation, the position of Professor of Agricultural Engineering at the University of Alberta was offered and accepted, and the Department was initiated with Professor J. Macgregor Smith as Head.

From that beginning, a greatly expanded faculty is now engaged in research and teaching of all phases of agricultural science, but special attention is still given to those most applicable to western Canada needs.

And both from the university and from the people themselves came leaders in the onward march of agriculture in Alberta. Henry Wise Wood, a rancher from Missouri; H. E. G. H. Scholefield, Herbert Greenfield, S. S. Sears, Henry Spencer, Norman Priestley, R. G. Reid – farmers all. Then came the later crop; Herb Boutillier, Jim Jackson, Carl Stimpfle, Henry Young, Arnold Platt, Ed. Nelson and Paul Babey.

And the women too, doing their share for the farm family and for other families in Alberta. We remember names like Irene Parlby, Zella Spencer and Winnifred Ross as examples of the many who gave unstintingly of their time and made the trail a little less rough for those who followed. These were the people who farmed for a living, and used time spared from their labours for the benefit of their friends and fellow workers.

But not only on the farm were men needed in the cause of agriculture and humanity. These farmers and their wives early demanded education for their families, and some of those growing sons and daughters sought advanced education at the University of Alberta. From there, some returned as leaders in their communities. Others emerged as scientists, co-operative leaders, social workers or nutritionists. Some went into the old professions of law, medicine and the ministry. But wherever they went, that farm background with its fostering of the ability to think for themselves and to act in emergency, stood them in good stead.

AFTER THE WAR

After the war, post-war readjustment was the order of the day. Wartime prices and supports for some farm and industrial products were removed, to the consternation of the farmers. It was removal of these controls, together with demand for parity prices that led to the strike by the Alberta Farmers' Union in 1946. The farmers felt that they had worked under difficulties and sacrificed much for the war effort, and that removal of controls was a poor form of thanks for their efforts.

Shortly after the war (in 1946), agreements between Canada and the United Kingdom were negotiated for a number of commodities. A wheat agreement provided for a total of six hundred million bushels over a four year period on the basis of $1.35 f.o.b. Fort William. Agreements were also entered into for beef, bacon, mutton and lamb, evaporated milk, cheese and eggs.

All wartime controls on rationing and ceiling prices of dairy products, and all subsidies on butterfat and cheese milk ended in 1947. Ceiling prices on oats and barley for feed were discontinued. With higher priced grains indicated under the British wheat agreement and withdrawal of price support for the livestock producers, there was a further swing to grain production. There was some apprehension too by those in authority about the lowering of quality of several important farm products. There was lowering in the grade of forage crop seed, fewer top quality hogs were being produced, and top scoring butter provided a smaller percentage of the make than in past years. One reason suggested was lack of efficient farm help. Another might have been that lower quality at the prevailing prices was yielding satisfactory returns.

Farm labour had been something of a problem throughout the war and after. To help solve this problem, a Farm Labour Service was inaugurated in 1942 by the Dominion Department of Labour and the Alberta Department of Agriculture. Eleven farm labour supervisors were appointed and in October of that year 2,000 eastern harvesters arrived in Alberta. Although the help was of considerable value, the youth and inexperience of some of the student harvesters reduced their usefulness. In following years, the age and experience factors received more attention.

Farm labour recruitment from prairie and eastern Canada sources continued for many years. But by 1959, no workers were being brought from the east, and while in the past the largest number of placements had been general farm workers, the principal effort was now in recruitment of workers for the sugar beet fields. Farm work was becoming more and more a skilled operation, and with the lack of skilled workers, farmers were being forced to greater mechanization both in crop and livestock production.

To provide official recognition of farm families who made outstanding contributions to agriculture and their communities, the Master Farm Family program was initiated. That was in 1949, and the first families to be acclaimed were those of L. R. Jensen, Magrath; W. J. Edgar, Innisfail; J. F. Melenka, Warwick; J. G. Dusseault, Vimy, and J. L. Paquette, Donnelly. A family had to be nominated by three farmers of the district and had to accept the nomination. Nominees were then visited by district and regional committees and on results of their findings, winners were named. One family could be chosen from each of five regions, listed as Southern, West Central, East Central, Northern, and Peace River. The Master Farm Family program remained open for nominations year after year, but not every year were awards made. By 1963, fifty-seven families had received the award during the fifteen years that it had been in operation.

In 1951 was introduced a means of honouring individuals in Alberta who had made notable contributions to agriculture. This took the form of Alberta's Agricultural Hall of Fame. On Tuesday, July 17, 1951, the Agricultural Hall of Fame was opened by the Government of the Province, in the presence of a large audience, in the Legislative Chamber. Honourable D. A. Ure, Minister of Agriculture, read the citations, and the recipients present were presented to the Honourable J. J. Bowlen, Lieutenant-Governor of Alberta, and Premier E. C. Manning. Following the ceremony, the Premier unveiled the tablet in the Hall of Fame. Those honoured on this occasion were Joseph H. Johnston, Edmonton (deceased); Henry Wise Wood, Carstairs (deceased); Frank Collicutt, Calgary; Claude Gallinger, Edmonton, and Charles S. Noble, Nobleford.

Interesting too, was the impact being made on agriculture at this time by industrial expansion arising from development of Alberta's oil and mineral resources. In 1946, with a population of

803,330, there were 448,934 rural dwellers. Of these there were 335,610 or 41.8 per cent on the farm. In 1951, with Alberta's population increased to 939,501 there were 339,955 people on the farm; but these represented only 36.1 per cent of the population in comparison with 41.8 per cent in 1946.

This trend has continued with fewer farmers operating larger farms, but industrial development was not alone responsible. Increased knowledge of what constituted a more economical working unit and expansion of mechanization both had a share in the change. In 1956 we had 79,424 farm operators farming 45,970,395 acres. In 1961, 73,212 farm operators were farming 47,228,653 acres.

In the three years, 1951 to 1953, bountiful crops were harvested in Alberta and across Canada. Average yields per acre for the three years in Alberta were wheat, 25.4 bushels; oats, 48.0 bushels; barley, 35.7 bushels. In comparison, average yields for the 45 years 1908 to 1953 were wheat, 18.2; oats, 34.5 and barley 25.6 bushels per acre. But huge crops often cause problems in the west, and the result of the 1951-53 yields was congestion of grain handling facilities and delay in marketing the season's crop.

A number of depressing influences were confronting agriculture at this time. They included domestic and world surpluses of grain and other commodities, limited purchasing power of importing countries, increased competition, and lowering of price levels of farm commodities. At the same time, costs of labour, services and goods that the farmer had to buy increased or remained stationary.

Inability of farmers to market grains, and lower price levels when those in other occupations were enjoying a high level of prosperity, was a cause for concern. To alleviate the situation in Western Canada, the Federal Government in November, 1955, announced a policy under which farmers could borrow up to $1,500.00 from a bank with their stored wheat as security.

Further measures to assist the farmers of the west were to follow. During 1957, several policies were announced by the Government of Canada. Among them were a support price on non-fat dry milk followed by import controls, a floor price on poultry, a floor price on turkeys followed by an embargo on imports from the United States, continuation of the policy under which a farmer could borrow from banks using stored wheat as security, and enactment of legislation under which farmers could obtain advances on farm stored grain.

An Agricultural Prices Stabilization Act followed, under which support prices on a new basis were provided for nine commodities. The commodities were butter, cheddar cheese, hogs, cattle, sheep, eggs, wheat, oats and barley grown outside the areas designated by the Canadian Wheat Board. In the following months products of Alberta farms also given support were dry skim milk, wool, poultry meat, sugar beets and honey. In the fall of 1958, the Government of Canada announced a western grain producers acreage payment under which a cash payment of $1.00 per seeded acre, up to a maximum of $200.00 per farmer, was paid to farmers in Western Canada.

The difficulty of cash marketing of grain accentuated the importance of livestock marketings as the main source of income, and record numbers of cattle were fed in feedlots during the winter and summer of 1957. It was around that time too that a brisk trade developed in cattle and calves from Canada to the United States. Exports of beef cattle and calves for 1957 totalled 108,957 compared with 6,289 in 1956. In 1958 it was 200,882. That was to the United States. Exports to all destinations from Alberta totalled 328,599 in 1957 compared with 239,278 in 1956. Swine too were increasing in number, and 1959 saw 2,300,000 head marketed — a total almost equal to the record production of 1944.

In 1961, drought struck again, and that part of the province south and east of a line from Foremost to Coronation was seriously affected. Feed was scarce or non-existent and by December 31, over 16,000 tons of fodder and 3,600 tons of grain had been brought in. Only in the Peace River region was there enough rain to produce a bumper crop.

Local demand for grain by livestock feeders continued at high levels, and the grain surpluses that had encouraged them were fast disappearing. Prices of coarse grains and feed wheat rose sharply and the higher priced feeds induced smaller operators to sell both their feeder cattle and grain. Sales of grain to new markets, including China, combined with below average yields in 1960 and a fifty per cent crop in western Canada in 1961, permitted delivery of practically all surplus farm stored grain to the elevators.

This was the period of expanding markets, and in 1963, sales agreements for 550,000,000 bushels were reached with countries that included Russia, China, Czechoslovakia and Poland. These sales extended over a two to three year period. In that year, yields of wheat, oats and barley exceeded the long time average, and the Canadian wheat crop amounted to 723,000,000 bushels.

It was in 1961 that the Federal Department of Agriculture extended provisions of the Prairie Farm Rehabilitation Act to all settled parts of the province. In that year too, the "Resources for Tomorrow" conference was held in Montreal. Closely related to this conference and development of the agricultural resources was enactment of the Agricultural Rehabilitation and Development Act by the Government of Canada. Under this Act, Federal and Provincial Governments shared with local people the costs of improving income and employment. Intention of the Act was to develop natural resources in rural areas, diversify and develop agriculture and local industry, and help country dwellers towards greater opportunities and satisfactions. The Act could provide help for alternative use of land, soil and water conservation, rural development and a wide range of research.

On January 31, 1962, an ARDA advisory committee was appointed for Alberta with G. R. Sterling as Chairman. Members of the committee were Dr. V. A. Wood, Director of Lands: A. W. Morrison, Deputy Minister, Department of Municipal Affairs; F. L. Grindley, Director of Water Resources; A. M. Wilson, Field Crops Commissioner; J. G. McGregor, Chairman, Alberta Power Commission; Dr. J. A. Toogood, Professor of Soil Science, University of Alberta; E. S. Huestis, Director of Forestry; W. A. Lobay, Supervisor, Soil Conservation and Weed Control; W. G. Brese, Bureau of Statistics; Curt P. Smith, Director of Fish and Wildlife, and Dr. G. R. Purnell, Director, Farm Economics Branch.

General recommendations for five projects were made and a general Federal-Provincial ARDA agreement was completed in December. Since that time, several projects have been undertaken with reference to soil and water conservation, alternative use of land, pasture, research, and rural development areas. More importance was given to rural development in the new agreement signed by the Governments of Canada and Alberta for the period April 1, 1965 to March 31, 1970.

IMPACT OF SCIENCE

No history of agriculture would be complete without a tribute to the scientists. The evolution of insecticides is a case in point. Until 1944, the farmer had to depend entirely on tillage, judicious cropping, or on chemicals that killed not only insects but man and his animals too. In that year, DDT was introduced. Here was a cheap insecticide, of low toxicity to mammals but highly poisonous to insects. Other discoveries followed until now, chemicals can be applied to control insects in crops, in the soil, and on or in livestock.

To realize how closely the chemist has co-operated with the farmer, we have to think only of the array of fertilizers, insecticides, fungicides and herbicides now available. There are insecticides also, the systemics, which, introduced into plant or animal, kill the parasite without harming the host. The biochemist has gone a step further. Through his studies of insect nutrition, he is helping the geneticist and the plant breeder to produce crop plants deficient in one or more food elements the insect needs, and thus kill it by starvation.

Among insects of the plains that are now more readily controlled are the pale western cutworm and the wheat stem sawfly; the cutworm with chemical as an aid to correct fallow practice, and the sawfly with the use of the sawfly resistant wheats Cypress and Chinook. And here the plant breeder enters the picture. From the introduction of Red Fife on, the cerealists have been working constantly towards new and better grain varieties. The wheat that helped to settle the west was Red Fife, that fortunate introduction by David Fife into Ontario back in 1842. Not until around 1870, however, was it brought into the Canadian west, where its excellent quality laid the foundation for a thriving economy. Two reasons are offered for the world esteem in which Canadian wheat is held. One is quality of the wheat produced; the other is the strict marketing regulations and the high grading standards set.

But excellent as was the milling and baking quality of Red Fife, it took too long to ripen and was often damaged by the frosts of fall. With the introduction of Marquis to the prairies in 1909, Red Fife quickly fell into disfavour. Marquis equalled Red Fife in milling and baking quality but ripened several days earlier. Marquis was also superior in yield and resisted lodging better than did its forerunner. In 1928, Marquis occupied about 90 per cent of the area devoted to spring wheat in Western Canada.

It all goes back to the organizer and first director of the Dominion Experimental Farms, Dr. William Saunders, and his idea of improving plants by breeding. That was in 1886. Fruits were his specialty, particularly a hardy apple for the northwest, but he turned his attention also to improvement of the wheat varieties then being grown. Too often Red Fife was frozen in the fields and the farmers appealed for something earlier.

Responding to this demand, Dr. Wm. Saunders imported wheat varieties from many countries. These he grew alongside Red Fife at the various experimental farms. Most of his introductions proved as late as Red Fife, and some that were earlier were inferior for milling and baking.

Ladoga, a wheat from near Lake Ladoga in Russia, first gave promise. It ripened some ten days earlier than Red Fife across Canada and yielded well. From 1888 to 1893 it was distributed to over 700 farmers in the Prairie Provinces. In those days it was difficult to make milling and baking tests from a few pounds of wheat only, and it was not until 1892 that the required car load was obtained by Angus McKay, Superintendent of the Indian Head Experimental Farm, and shipped to Toronto for testing. Here, milling and baking tests proved disappointing. Ladoga flour was deficient in strength, was coarse in texture and very yellow in colour. Further distribution was discouraged, but Ladoga was used extensively in breeding work in the early days. The early Preston and Stanley had Ladoga for one parent and Red Fife for the other.

Among the places to which Ladoga was introduced were Dunvegan and Fort Vermilion on the Peace River. At both places the wheat was raised in good condition. It weighed 64 pounds to the bushel at Dunvegan and 60 pounds at Fort Vermilion. In 1903, J. M. Macoun, who was visiting the area, reported 7,500 bushels of wheat grown in the Fort Vermilion district. At that time a Hudson's Bay roller mill there had a capacity of 20 barrels a day, and the Company was paying $1.50 a bushel for all wheat grown in the vicinity. Their idea was to supply all their northern posts with this Fort Vermilion flour.

But back to Marquis and Dr. William Saunders. Working with Dr. Saunders were his two sons, Charles E. and Arthur P. Saunders. It was the former who was responsible for discovery of Marquis. With his heavy responsibilities as Experimental Farm Director, Dr. William Saunders lacked the time to continue with the laborious and time-consuming work of wheat breeding and selection, so in 1903, Dr. Charles Saunders was appointed by the Government to take charge of it.

Taking up his quarters at the Central Experimental Farm, Ottawa, his first concern was to consider possibilities of the crosses already made in co-operation with his father and brother. Among these crosses he discovered, in 1904, the one between Red Fife and Hard Red Calcutta which, after long selection and re-selection, resulted in introduction of Marquis.

Since 1928, when Marquis occupied around 90 per cent of the wheat acreage in Western Canada, it has been superseded by other varieties. Marquis milling and baking quality remained the standard but other qualities were needed. Rust resistance and earlier maturity were among them, and we have now for Alberta such varieties as Canthatch, Park, Saunders and Thatcher.

In 1938, a cross was made at the Central Experimental Farm, Ottawa, between Apex and the unnamed S-615; a cross that was to have a profound influence on the wheat stem sawfly infested areas of the plains. The resultant population was transferred to the Experimental Farm at Swift Current, Saskatchewan, where A. W. Platt and his associates, cerealists and entomologists, produced the sawfly resistant wheat Rescue. In the spring of 1946, 7,000 bushels of Rescue were distributed to experimental substations and selected growers. In 1955, 3.9 per cent of the acreage in Alberta and 11.9 per cent of the acreage in Saskatchewan was sown to this variety. Since then, Rescue has been replaced by new and improved sawfly resistant varieties, of which Chinook and Cypress are now popularly grown.

The story of research is a story in itself. Not only have the chemist, the plant breeder and the entomologist added to agricultural knowledge and progress, but the soils specialist, the geneticist, the plant pathologist and numerous others have contributed. Then there are the animal science specialists, who have developed and are developing improved types and better management practices.

So the scientist, the farmer, the policy maker, the administrator, the educationist and the extensionist have all had a share in the history of agriculture in Alberta. To none can we point and say that he alone was responsible. It has been a matter of progress, step by step, sometimes slowly, but always hopefully, with all concerned doing their share towards provision of that basic element of existence, food.

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